# The Genu-Pectoral Posture—its Value in Impeded Uterine Reduction and in the Prolonged Nausea and Vomiting of Pregnancy.

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# THE GENU-PECTORAL POSTURE—ITS VALUE IN IMPEDED UTERINE REDUCTION AND IN THE PROLONGED NAUSEA AND VOMITING OF PREGNANCY.

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In our professional treatment of the pregnant woman there are few disorders more embarrassing than the extreme and obstinate nausea and vomiting which not infrequently are attendants on gestation. A certain amount of "morning sickness," or even hours of nausea during the day, alternated by intervals of relief, in which food can be retained and adequate nutrition secured, are occurrences so common as to be accounted among the normal signs of pregnancy. They are rarely made the occasion of an appeal for medical advice.

It is when this mild disturbance, generally regarded as trivial and a matter of course, becomes exaggerated in its character and unremitting in its endurance—so as to disable the retentive power of the stomach and to obstruct nutrition, causing emaciation from starvation, and bringing the sufferer and her offspring to the verge of the grave by hunger and inanition—that both the physician and the patient at once painfully recognize the danger and difficulty of the situation, and become penetrated with the ghastly intuition of despair.

In a former meeting of this Society[1] I had the privilege

[1] "Rectal Alimentation in the Nausea and Inanition of Pregnancy; Intestinal Inhaustion the True Solution of its Efficiency." *American Gynecological Transactions*, vol. iii, 1878.

of discussing at some length the importance of rectal alimentation in such cases of gastric disability from the same cause, and to present it as a valuable resource for sustaining the nutrition and life of the sufferer, even in cases in which all remedies had failed to arrest the vomiting. I presented it as an escape from that most dangerous and questionable refuge of despair so often suggested in such cases—I mean induced abortion. It is my intention on this occasion to present my experience in a method or device even more widely and numerously applicable to cases of reflex nausea, and one which long and abundant experience has demonstrated to me its high value in abating and often removing the nausea and restoring the retentive capacity of the stomach under buccal ingestion. This valuable resource, as indicated in the title of this communication, is automatic reduction of the gravid dislocation in the genu-pectoral posture; for such a dislocation, either with or without impaction, will nearly always be found to exist, and, when existing, to constitute the entire or principal cause of the severity and persistence of the distressing reflex gastric phenomena.

In my first paper[1] on the postural treatment of uterine displacements (April, 1875) I briefly enumerated the various hystero-dynamic reflexes to which the pregnant woman is liable, and prominent among them I noted gravid nausea as one greatly and promptly to be relieved by automatic replacement of the gravid uterus by the pneumatic repositor applied in the genu-pectoral position. The following paragraph will be found to present the importance then attached by me to the expedient: "I can not but believe that to uterine displacements more than to any other cause, more than to all other causes combined, is due the alarming frequency of abortions in the period before and about the time of quickening. Frequent replacement lessens these dangers,

[1] "A Résumé of a Report on Position, Pneumatic Pressure, and Mechanical Appliance in Uterine Displacements," read before the Georgia Medical Association at Savannah, April 23, 1875. See June number *Atlanta Med. and Surg. Journal*, 1875; also more fully in pamphlets of same date.

facilitates quickening, or, at least, ascent of the womb, and anticipates the liability to impaction. *Nightly self-replacement* greatly mitigates, indeed, often entirely relieves, the irritations, whether local or reflected, which are known to arise from varying degrees and forms of displacement which are not only incident to, but are almost *normal attendants* upon, the earlier months of pregnancy. Every one is familiar with the distresses arising from these *gravid displacements.* Locally, they are: Vesical and rectal irritation; tenesmus; sense of weight and downward pressure—"falling out"; vaginal and vulvar irritation; leucorrhea, sometimes with dangerous contractions; frequent uterine and abdominal pains, with threatenings of abortion. Among the *reflex* irritations of early pregnancy which are exaggerated by "gravid displacement," perhaps *nausea, or "morning sickness," is the most prominent and distressing; for it will be understood that lying down all night will not benefit a prolapsus unless replacement has been made on going to bed.* Hysterical nervousness, wakefulness, and many of the nondescript miseries of these early months are also, as every one knows, but manifestations of reflected uterine irritation."

From the above record it will be seen that I had given an early recognition to gravid displacement as one of the principal causes of prolonged nausea and vomiting in pregnancy, and, further, that I then regarded postural pneumatic replacement as an expedient almost indispensable for its relief. The subject had, long previous to that date, strikingly elicited my attention and occupied my careful study—indeed, more than this; so constantly had it been a measure of practice with me before that time, and more especially since devising a means for *self-replacement*, that there are scarcely any of those who have ever consulted me at any time for this distressing reflex of the pregnant condition who are not fully aware of the value of genu-pectoral replacement as performed for them by myself manually, or who have not become familiar with the use and benefits of the pneumatic repositor to allay or to prevent the distress of excessive nau-

sea and vomiting, besides many other of the discomforts inseparable from the earlier months of pregnancy.

GENU-POSTURAL ATTITUDES.

As it is now nearly ten years since I have had the opportunity of making any publication on the subject, my last paper being a report read before this Society at our first meeting (New York, September, 1876), I will ask the privilege, before presenting the cases which are the occasion of the present remarks, to occupy some time in the discussion of the genu-pectoral posture itself, and of some of the strictures and—as I believe some of them to be—misconceptions in regard to it which have appeared during the lapse of that decade.

The term "genu-pectoral" was first used by myself in a synoptical report read before the Georgia Medical Association at its meeting in Savannah, April 23, 1875. It was devised to designate and to accurately describe, as well as to *differentiate* also from several others, a position which, though the profession had been, in earlier periods, somewhat familiar with, had, for almost half a century, seemingly disappeared, with a few exceptions, from medical literature. Though adopted by some, as also the knee-elbow position, for certain surgical operations within the vagina, the genu-pectoral posture seemed to be seldom or never referred to as an available adjunct in the reduction of uterine dislocations. At the present time I would be greatly surprised and disappointed to learn that any gynecologist—whatever else he might find, or *think* he found, it necessary to do in addition—would attempt to replace the uterus, non-gravid or gravid, in any of its dislocations,[1] complicated or simple, without first

[1] It will here be understood that I do not refer to *flexions* of the womb. These are *intrinsic* affections, which I class as *distortions* or alterations in the normal form of the organ. These are by some named indifferently with the versions or *obliquities* of the uterus. The flexions, however, seldom exist without some accompanying *displacement*, the correction of which last, whether by postural replacement or otherwise, does not, of course, relieve the distortion, be it anteflexion or retroflexion. Conditions so different as flexions and versions

placing the woman in the genu-pectoral posture and allowing air to enter the vagina.

The object of that first paper (April, 1875) was, first, briefly to call the attention of the profession to this postural method in all attempts at uterine replacement; second, to show the indispensableness of allowing air to enter the vagina —"to break the suction"—that the reversed gravity might act in the uterine reduction; and, lastly, to supply a means of self-replacement — the *pneumatic repositor*—by which the patient could accomplish, in most cases, the automatic reduction of the uterus by the simple introduction of this "air-way" while in the genu-pectoral position.

At the first meeting of this Society (Academy of Medicine, New York, September 13, 1876) I read a more extended paper[1]—indeed, the full report, the *résumé* of which had been presented at Savannah, April 23, 1875. In this paper I was careful to present researches into the history and, as far as I could learn it, the origin of this postural device from the earliest times. I could trace it back clearly to the time of Deventer (1701); but, in a work[2] published by von Ritgen in 1820, there was found a fuller discussion of this and other postural methods as used in obstetrics principally, and somewhat in the gynecology of that early day.

This last author refers to various modifications of the knee-posture—knees and hands, knees and chin, knees and elbows, and knees and breast. I classed all these varieties under the common head of "Genu-postural Attitudes"—thus: genu-manual, genu-mental, genu-cubital, and genu-pectoral. This substitution was made in order that the classic derivation might secure definiteness to the several modifications in all languages.

should no longer be designated by the same name. Modern gynecology should be relieved from such confusion.

[1] "Pneumatic Self-replacement in Dislocations of the Gravid and Non-gravid Uterus." *American Gynecological Transactions*, vol. i, p. 198, New York, September 13, 1876.

[2] *Die Anzeigen der Mechanischen Hülfen bei Entbindungen.* Ferdinand August von Ritgen. Giessen, 1820, p. 154 *et seq.*

The last of these, the genu-pectoral, was *the only position* I sought to bring into requisition as the posture for uterine reduction.

Just at this point, and while indicating the singleness and entire separateness from all others of the position I advocate for uterine reduction, I am glad courteously to render an explanation. Repeated reference to the subject on various occasions and in different printed papers has been made by a respected Fellow of this Society, Dr. Nathan Bozeman, of New York. This is the first occasion since, that I have had to make any remarks on the genu-pectoral posture. I now respectfully give the reason, which I hope will be satisfactory, why, as it is claimed, attention has not been called in any part of my two former brief papers to the position and to the accompanying arrangement, devised by himself for surgical procedures within the vagina.

Few, I think, could have been more conscientious than myself, as those papers will show, in according to every one his full measure of originality in anything that tended, either recently or in the past, however distant, toward the perfection of this method, revived, perfected, and named by me, and given wide currency, claiming for it, as I do now, that it is an indispensable requisite in uterine reposition.

In one of Dr. Bozeman's most decided references to the subject of a previous recognition by him of the value of postural methods in uterine replacement, he calls attention to the position and devices used by him—with the date of their application—in the several operative procedures in vesico-vaginal fistula, and, more recently, for "columning the vagina" by packing with tampons of cotton. I here refer to a portion of Dr. Bozeman's remarks from the *Atlanta Medical Register*, December, 1882.[1] It will be found that the knee-*elbow* or genu-*cubital* position is the one used by him so long ago (1853), and not the genu-pectoral, "with the chest resting on the same horizontal plane with the knees," as I have described

[1] "The Value of Graduated Pressure in the Treatment of Diseases of the Vagina, Uterus, Ovaries, and other Appendages." Vol. ii, No. 3, p. 129.

it, but on a support which elevates the chest to a level with the hips. The doctor terms this the "knee-elbow position" —of which it is indeed the equivalent; nay, even more, it is equal in elevation to the genu-manual, while he terms the one I recommend the "*exaggerated*" knee-elbow position. Well, then, it is this "exaggerated" position, *and this only*, that I recognize as the genu-pectoral, and as the only one which I have heretofore employed or can now recommend for uterine replacement, however more convenient any other may be for prolonged surgical operations within the vagina.

Dr. Bozeman has quite fairly, and perhaps somewhat ingenuously, introduced the illustration from my paper side by side with his own. I respectfully ask the same privilege in answering his claim for identity in the two positions represented.

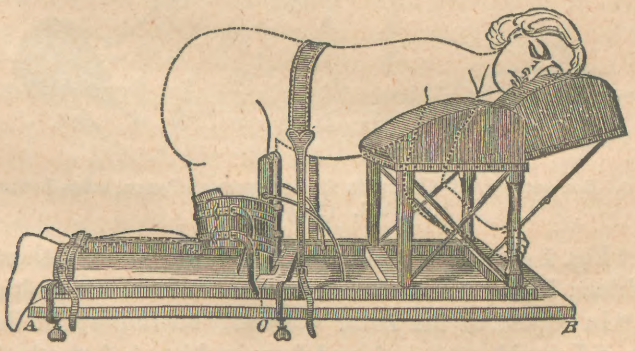

FIG. 1.—Dr. Bozeman's representation of "the knee-chest position upon his Supporting and Confining Apparatus." (Reduced from Bozeman.)

These are his remarks relating to the two illustrations: "In the *New York Medical Journal* for February, 1859, in an article entitled 'Remarks on the Advantages of a Supporting and Confining Apparatus and a Self-retaining Speculum in the Operation of Vesico-vaginal Fistula; Modes of Certain Forms of Suture; their Results practically contrasted in the same Cases and upon the same Fistulous Openings,' I introduced a cut to show the knee-chest position of the

patient upon my supporting and confining apparatus, and the principal objects sought to be attained by it, to wit:

"1. Extension of the vertebral column and relaxation of the abdominal muscles essential to free gravitation forward of the pelvic and abdominal viscera.

"2. Support and mechanical confinement of the patient by controlling muscular action at certain points without encumbering the abdomen or interfering with the functions of respiration and circulation.

"3. The safe administration of anesthetics.

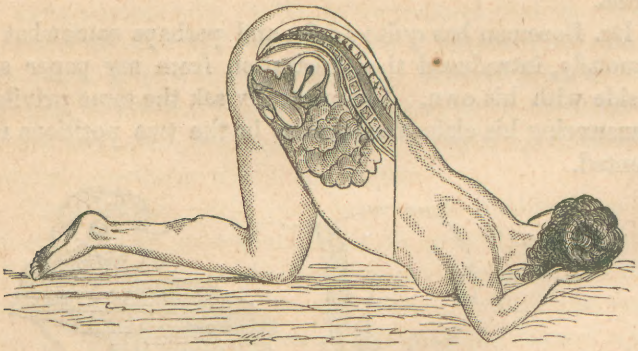

FIG. 2.—Retroversion of the Uterus in the Genu-pectoral Posture before Reduction. Campbell. (Diagrammatic.)

"Fig. 1 shows the apparatus at work in the knee-chest [!] position; Fig. 2 shows the exaggerated knee-elbow position.

"In regard to the latter position," continues Dr. Bozeman, "I would say, as viewed from an historical standpoint, it came into use contemporaneously with that of the knee-elbow position, since it is well known by all, who have had any experience with the knee-elbow position, that a patient, when placed in it for examination or operation, almost always sinks from fatigue and exhaustion into the exaggerated knee-elbow position, as above shown, and therefore the advantages and disadvantages of it must have been long and well understood in practice.

"From the beginning of my experience with the knee-elbow position (1853) *my object always was to prevent the*

*patient from getting into this exaggerated knee-elbow position,*[1] which I effected by placing a support under the chest so as to bring the body up to a horizontal plane, as shown in Fig. 1. In this way I avoided one of the *disadvantages*[1] of the position—perhaps the most important—namely, the *cutting off of the light*[1] from the vesico-vaginal septum and cervix uteri. My supporting and confining apparatus, as here illustrated, was simply an improvement upon my simple bench-support, usually extemporized for the occasion of converting an exaggerated into a knee-chest position."

"Dr. Henry F. Campbell—from whose article I have copied this cut, which was published in the *Transactions of the American Gynecological Society* for 1876, seven years later, and entitled 'Pneumatic Self-replacement in Dislocations of the Gravid and Non-gravid Uterus'—must also have known the fact here stated, and yet he claimed it as something which had scarcely been known, up to the time of his writing, for practical use in the treatment of prolapsus and retroversion of the uterus. Not only this; he named it 'the Genu-pectoral Position'—the English [Latinized?] designation of my position [?]—the knee-chest, published nine years before, and, what is still stranger, without making any acknowledgment or explanation for so doing. *In all of my references to the knee-chest position in these remarks I mean the one with the body of the patient resting on a horizontal plane upon my supporting and confining apparatus, or any improvised support, and the exaggerated knee-elbow position with the breasts of the patient on the same plane with the knee as here illustrated by Dr. Campbell.*"[2]

In reply to these not well-considered remarks, I must say that I think any observant reader will decide that Dr. Bozeman has *fully answered himself*, both in his text and illustrations, so far as regards the charge that I have been claiming and giving a name to "his position" and then using it as a method or device for uterine reposition. I most earnestly hope, for the interest we all have in the success of the

[1] The Italics are mine.—H. F. C. [2] The Italics are my own.—H. F. C.

treatment, that his persisting in giving this position (which I have named, but have never claimed) the *wrong* name will not produce confusion in the minds of those who may require to use it for the purpose for which I have recommended it. No position in which the chest is elevated upon the elbows, and especially when it is pressed upon a support, as in his knee-bench posture, can be relied upon for a satisfactory reduction of the uterus in any of its dislocations.

Now, in regard to the graver and more serious charge, that I have willfully neglected to give due recognition, on all proper occasions, to the requisition made by him of genu-postural attitudes for surgical purposes, I think I can free myself by my printed records, in which his name has appeared as on equal footing and in the most illustrious association.

In answer to the charge of ignoring Dr. Bozeman, or any previous workers in this field, I think I can say that I do not suppose there can be found anywhere a more complete or a fairer history of the various applications made by others of genu-postural attitudes, for any purpose whatever, than will be found in my paper in the first volume of these *Transactions*—from Camper in the middle of the seventeenth century, "who used it for various organic derangements," to Deventer in 1701, I carefully, as will be seen, traced it to the time of my writing in 1875—the date and the name of every writer I could learn who had used these knee-postures, the object for which they were applied, and the particular variety adopted. I found, as seen there, that the knee-elbow was most often used, and, in the largest number of cases, for surgical and obstetrical purposes, that the knee-chest and uterine replacement were seldom mentioned in connection by the older writers; and, further, that it was, with few exceptions, not to be found anywhere in systematic works on gynecology for the past thirty-five or forty years as a position distinctly proposed for uterine reposition.

In reference to the frequent use of knee-postures at the time of my report (in "Résumé," 1875), it will be seen that

in my brief "Résumé" I spoke distinctly and pertinently of Dr. Bozeman:

"The journal literature of this and other countries for some years past has teemed with discussions on 'postural treatment' for various abnormal conditions of both men and women. I recall but very few in which uterine reposition at all is their object; and I am not aware of a single instance in which distinct mention is made of the genu-pectoral posture being applied for its true object, the utilization of *air-pressure*, as the instrumentality to effect uterine replacement by gravity. If there is any such indoctrination, either in the books or in the journals of the last twenty years, besides those above referred to, it is more my misfortune than my fault that I have not become familiar with them. And though the chapter of my report relating to the history of knee-and-breast posture is closed, full credit will be gladly given to the authors for their praiseworthy, even though unsuccessful, efforts to fix attention upon this most valuable method of correcting the malpositions of the uterus. 'It will be recollected that the use of the measure made by *Drs. Sims and Bozeman* had in view a far different object—not uterine reposition at all, but operations within the vagina for the cure of vesico-vaginal fistula and other accidents, and affections of a purely surgical nature.' 'In the report just pronounced by me at Savannah, *the object was distinctly proclaimed. It was to establish among gynecologists generally, in this as well as in foreign countries, pneumatic pressure as it can be evoked and utilized in the genu-pectoral position as a constantly available and powerful instrumentality, not only for occasional use in unusual and difficult cases of displacement, but for daily application also, in the mildest forms and degrees of uterine malposition.*' The use and benefits of this method," I here continue, "would be greatly restricted and depreciated should its application involve the attention each time of the physician or even a nurse; it became, therefore, an object of earnest thought that I might place in the hands of suffering women, through their medical

advisers, an ever safe and 'ready method' of *self-replacement*, by which in most cases instantaneous relief might be secured from not only the distress and many inexplicable discomforts of uterine dislocation, but, far more important, from the imminent dangers, to both mother and offspring, which, from this cause alone, constantly hang around and imperil the yearned-for result in the earlier months of gestation."

From the above I think it will be seen and fully appreciated that my object and the goal of my interest and efforts were in the direction of uterine reposition. With an eye single to this purpose, I was led away from every confusing consideration of the surgical uses of genu-posture; in the same manner as were those—and Dr. Bozeman among them—who, while intent upon its surgical applications, evidently overlooked and never thought of recommending it for systematic and invariable application, as I did, in uterine reduction.

SCOPE OF THE GENU-PECTORAL POSTURE IN UTERINE REDUCTION.

Since my last published paper on automatic uterine reduction, several striking discussions of the method have appeared in this country and in Europe. Some of these, doubtless, have seemed to be of such a character as would challenge a reply or explanation from myself in regard to certain positions taken by the writers on the efficiency of the method, and as to my expressions of confidence in its wide applicability to the various conditions of dislocation. To one or two of them I hope to give some attention should space be allowed in a later part of the present remarks.

On examination, the report furnished to the first volume of these *Transactions* will be found to be, obviously, an unfinished discussion. Its intended scope was a consideration of all the varieties of uterine dislocation that had been found in my own experience, amenable to reduction in the genu-pectoral posture—that being the important factor in the facility of its accomplishment. The necessary closing of

the volume left a large portion of this discussion still in manuscript, and it has remained unpublished to the present time. From these notes I propose to present now a consideration of one or more other displacements besides those of prolapsus and retroversion, at which point the discussion was then unavoidably closed. Prominent among the displacements thus left without particular presentation was that common and distressing obliquity known as anteversion, which, scarcely less obviously than retroversion, acquires great facility in its correction by placing the patient in the genu-pectoral posture.

### THE GENU-PECTORAL POSTURE IN ANTEVERSIONS.

It will be recollected that in anteversion the uterus, in most women—normally inclined forward—becomes exaggerated in this inclination, and in time assumes a completely horizontal position, lying upon the bladder. Lastly, it may so continue to increase the degree of this bowing downward as to compress the bladder, encroach upon and diminish its centering cavity, and *imbed* its fundus in a sort of *impaction* in the loose, long-fibered connective tissue—with a fold of peritoneum always between—behind the body and symphysis pubis. In this degree of anteversion, while the fundus rests thus imbedded or impacted against the posterior face of the body of the pubis, the cervix is tilted high up in the posterior *cul-de-sac* of the vagina, and presses upon the anterior wall of the rectum, with the posterior wall of the vagina between. Leveret is reported by Thomas as citing a case in which the cervix was found to protrude into the rectal cavity after ulceration of the intervening walls of the two passages by prolonged and strong impingement.

In this obliquity or "aberration of direction" the fundus has deviated as far *forward* from its axis of suspension by its moorings, as it deviated from the same axis *backward*, in what is called the second degree of retroversion, when the fundus lies under the promontory in the hollow of the sacrum, and in which the cervix presses on the anterior wall of

the bladder, near the neck, with the upper wall of the vagina between.

In this anteverted condition of the organ, the weight, having toppled it over, to lie horizontally upon the vagina, would alone be competent to keep it in this position with the posterior aspect looking upward; but, in addition to its own weight, the floating intestinal folds and all the superincumbent weight of the viscera, compression from muscular action of the diaphragm, and other inclosing muscles of the abdomen—all conspire to prevent its rising again to its normal direction and position near the center of the area near the pelvic brim.

The above familiar but imperfect sketch of the position and relations of the anteverted uterus is important to have before us; but it is far more important to our present discussion to consider well *the bearing of the gravity* which has brought it down and *keeps* it down in its present position. For then it can not fail to be seen that, by *reversing* the bearing of this gravity which brought it *down*, the same

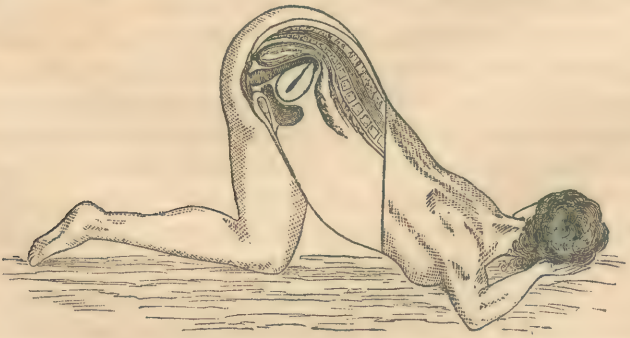

FIG. 3.—Anteversion of the Uterus in the Genu-pectoral Posture, before Reduction. (Diagrammatic.)

gravity can be made to carry it *up* with all the superincumbent mass, invoking a *draft of the viscera*, as the result of the genu-pectoral posture and atmospheric equilibrium. The question, then, is, *Does genu-pectoral posture reverse the bearing of the womb's gravity in anteversion?* If it does, it

must be favorable to the fundus revolving *back to its normal center of suspension*, in the same way that genu-pectoral posture causes it to revolve *forward* to the *same* center in *retroversion*. Complete success in the hands of any one who will intelligently attempt the process, will both convince and gratify the operator, while a careful consideration of the bearings, represented in the diagrammatic drawing from the artistic pencil of Dr. A. Sibley Campbell, will demonstrate the mechanical reason why such a result should be expected. Imagine that uterus, a *gravid* one of four months, and its revolving back on such a reversal of gravity as is instituted by genu-pectoral posture would readily be acknowledged as inevitable. So, in a corresponding degree, though not so

FIG. 4.—Gravid Anteversion in the Genu-pectoral Posture, before Reduction. (Diagrammatic.)

*plumply*, will the non-gravid body and fundus swing backward and downward into extreme reposition, to hang at the end of the elongated and stretched vagina.

### ADHESIONS AND IMPACTIONS.

Before discussing the method which specially belongs to the reduction of this particular luxation, it is well to recall the fact that, from the first communication on the subject, two conditions were given as *exceptions* to the invariable result that may be calculated upon in placing a woman in knee-and-breast posture, and then allowing air to be sucked into the vagina; these were stated to be adhesion and im-

paction. Gravity will not bring an apple from the tree so long as its stem adheres; gravity will not bring an apple to the ground should it become lodged or impacted in a fork of that tree. These are homely comparisons, but apposite.

In most obliquities, whether anterior or posterior, genu-pectoral posture and vaginal inflation will promptly restore the uterus. In both cases the uterus revolves and then *glides downward*, and in both cases reaches to and *rests at* the same point—which is one beyond the natural level of the organ in any other position of the body. In retroversions, the uterus revolves *forward*, and then glides downward; in anteversions it revolves *backward*, and then glides downward. In both cases the *drift* is to the full length of its moorings by the vagina and ligaments. Often the cervix can scarcely be reached by the longest index-finger. After the revolution in either case, the gliding downward is an easy and rapid stage of the process of genu-pectoral restoration.

In regard to the two exceptions above mentioned, I think adhesions seldom exist to obstruct uterine reduction in the genu-pectoral position. Failure to move the organ with the patient in dorsal decubitus, or otherwise, has frequently been attributed to adhesions, but I think improperly; the same luxations would be promptly restored by pneumatic reduction and reversal of gravity.

Actual impaction, in various degrees, may occur in any of the forms of displacement, from disproportionate dimensions of the uterus to those of the bony pelvis. This is more frequent in retroversions and prolapsions, though not impossible in anteversions. Pregnancy, fibroids, and hypertrophy, or hyperplasia, are the more common causes. Such impacted retroversions and prolapsions, as I have said, do not yield to genu-pectoral posture *alone*, but this position, above all others, is by far the most advantageous for the application of any additional mechanical force or device that may be brought to bear for accomplishing reduction. The most familiar, and also the most serious, are impacted retroversions of the gra-

vid uterus. Some of these are cases of *jamming*, from disproportion—utero-pelvic—while others are only so *apparently*, on account of the fixity of the uterus *in situ*. Of these latter, the majority are promptly reduced by reversal of gravity in genu-pectoral posture. Some few of them require additional measures to *start* the revolution of the fundus. Instances of both these conditions will be found among the cases to be hereafter reported.

Then, in regard to these latter cases, it may be said that, besides this actual impaction from *jamming*, there is, in many cases, an imbedding or socketing of the fundus in the structures of the part upon which it has long impinged—in which it rests as the round head of a bone in a cup-like articular cavity. This exists quite often in anteversion, and an analogous condition often also exists in retroversion, where the bony concavity of the sacrum favors it. This is a kind of impaction more to be considered in connection with the genu-pectoral position than when former postures were adopted for replacement. At that time, should the obliquities fail to be reduced by Simpson's or Sims's repositor, they were liable to be considered as adhesions, while, unquestionably, many of them might have been replaced by postural pneumatic methods. A flexion coinciding in direction with the obliquity is a complication which renders this socketing more marked, and, especially in anteversions, buries the fundus behind the pubic bone, and greatly enhances the difficulty in initiating the backward revolution.

For the advantage of constant comparison, it is always convenient to consider the two obliquities together. The special *processes* sometimes found necessary for the reduction of each in the genu-pectoral posture I will presently comment upon separately.

### THE POSTURAL PNEUMATIC REDUCTION OF ANTEVERSIONS.

As has been indicated, when the subject of anteversion is in the erect or standing position, the inclination of the uterus forward about equals the horizontality of the organ in the

second degree or stage of retroversion, and a line drawn through the long axis of the fundus and cavity of the anteverted uterus would, if continued, traverse the long diameter of the organ in this degree of retroversion. The one reclines backward, resting upon the rectum, the other bows forward, and rests upon the bladder. In the erect position, the anterior face of the retroverted organ looks upward, while in anteversion it is the *posterior* wall of the uterus that looks upward. The bearing of gravity in both cases is almost directly downward.

When a woman with the above-mentioned degree of either of these obliquities is placed in the genu-pectoral posture, the anterior wall of the retroverted uterus looks forward and downward, while the posterior wall of the anteverted organ looks forward and downward to the same degree.

By this partial inversion of the body—the most complete that can be made, with the knees and breast resting on the same horizontal plane—the *bearing of gravity* is reversed, and now the center of gravity or of suspension common to both will be somewhere near the middle of the area of the pelvic brim.

Anteversion having previously been made out, digitally and bi-manually, in dorsal decubitus, and the rectum, but preferably *not the bladder*, evacuated, the patient should be placed in knee-breast posture, "with all bands and girdles loosened, with abdominal muscles relaxed, and breathing easily."

If, now, the index-finger of the right hand be carefully passed through the closed vulva into the collapsed vagina, with the palmar surface downward, the fundus—from the size of an egg to that of a lemon—will be felt pressing up against the anterior—now the lower—wall of the vagina, with the more or less flattened bladder between. Its identity can be verified by bi-manual palpation, or, better, by *thumb-digital grasp*, the thumb resting on the vaginal projection of the fundus, while the fingers inclose it externally above the pubis.

It is better now, unless immediate replacement is intended, that no attempt should be made to reach the cervix, as, in this degree of anterior obliquity, especially where replacement has been frequently made, the letting of air into the vagina would soon lessen the prominence of the fundus at the pubis. Having completed the examination in genu-pectoral posture, the operator, standing directly behind the patient, will introduce one or two fingers, palmar surface upward, and lift up the perineum at the fourchette. Air enters, generally with considerable force, and, in the majority of cases where socketing — with or without ante-*flexion*—does not exist, the uterus rather slowly revolves backward, and then rapidly glides downward to its point of suspension at the end of the distended and elongated vagina.

In many cases where the obliquity has been of long existence, and the fundus has never been disturbed from its bed, or socket, by reposition, the pneumatic reduction is not entirely automatic and spontaneous in the beginning, but requires one or two kinds of assistance which, from my experience, I am able to describe as successful in unsocketing the fundus, in order that it may begin its backward revolution in obedience to reversed gravity.

### UNSOCKETING THE IMPACTED FUNDUS.

It would here appear quite obvious to many that—in this inverted condition of the trunk which has exalted the uterus to the top, as it were, of an inclined plane, with inverted gravity impelling to revolution and descent, with the heavier viscera, which before pressed upon its posterior or upper surface, keeping it down, now all drifting away by their own weight toward the diaphragm, and only a few inflated intestinal folds loosely floating below it—the womb, overcoming all obstructions, would pass down among them like a bird flying among the leaves of a tree, or a balloon through a cloud, soon reaching the limit of its suspension. This, as I have shown, is most commonly the case, and yet sometimes

much patience and some dexterity are required to coax the fundus to begin the movement.

The application of and dragging forward with a hook upon the anterior or posterior lip of the os, while the patient is in the genu-pectoral posture, or pulling with an acutely bent sound or probe in the cervix, would suggest itself as an excellent means of starting the revolution. Such, I think, would be a ready and efficient method, but I have as yet never been required to use it in any case.

My own methods have been entirely manipulative. I press upon the fundus through the anterior, now lower, wall of the vagina—with the bladder between—with the fingers of one hand, while I make succussion with the other by alternately lifting up and letting fall the hanging and relaxed abdominal wall. This is attended with alternate puffing and sucking of air at the vulva, and is calculated to *jostle* the fundus from its bed behind the pubic wall. These have been the devices that I have found sufficient to effect the object —most frequently in the first attempt.

I have frequently found the fundus revolve more readily where I have instructed the patient to take the knee-breast posture, and to apply the repositor several times a day, in order to lessen the dysuria and vesical tenesmus attending this displacement; on some subsequent visit, gentle pressure on the fundus and but a slight succussion of the abdomen carry it back, or the organ may promptly revolve by my elevating the perineum, suddenly inflating the vagina in genu-pectoral posture. After reduction has one or more times been made in these impacted cases, I seldom afterward find any difficulty in the restoration being made in the simple introduction of the pneumatic repositor by the patient herself, in the genu-pectoral posture.

As is well known, there is no variety of displacement that so readily recurs after reduction. Some appropriate form of internal mechanical support long worn, besides a well-devised general and local treatment, is indispensable to comfort and permanent relief.

An instrument which I have used for the past ten or twelve years, and to which I have given the name of the "Protean Cushioned Pessary"—made for me by Messrs. George Tiemann & Co., New York—is one which I find, when molded at the time of application into the curves required, as here represented, to give a better support and more perfect relief in anteversion than any other.

In order to indicate the proper position of this pessary, after placing, I have found it convenient to affix a knot of thread to the under aspect of the anterior or pubic cushion. I now direct that a slight *bump* or elevation be made in this place at the time of its manufacture. After placing the pessary, the finding of the elevation, with the index-finger, on the under-surface of the anterior cushion—by the medical attendant or the patient—will indicate that the adjustment has been properly made in every particular. The elevation is on the free surface of the anterior or pubic cushion, and does not impinge upon any part of the vaginal mucous surface. It is represented in Fig. 5, but not in the other

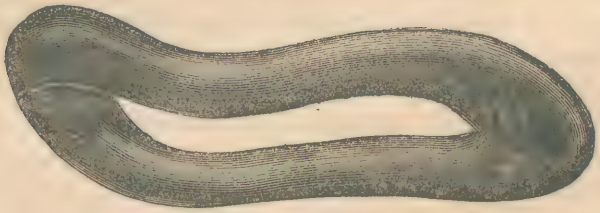

FIG. 5.—Protean Cushioned Pessary.

cuts. The anterior curve, as represented in this cut, should have been more decided. The elevation of the cushion, however, is a matter of adjustment for the operator. This pessary, like all others, should be applied after reduction, and while the patient is still in the genu-pectoral posture. The cushion at the end of the longer curve turns slightly downward, and is to rest in the posterior *cul-de-sac* of the vagina, while that at the more acute curve turns upward, when the patient is lying or standing, and rests behind the pubic wall of the pelvis. It is made of soft wire wrapped and then cov-

ered with India-rubber tubing, having a soft bulb or cushion at each pole. The instrument may be molded in its curves, or the shanks may be more or less widely separated, thus shortening or lengthening the diameters to suit any particular case; hence the name *protean*, from the capability of changing its form. When made, it is sent in the form of


Fig. 6.

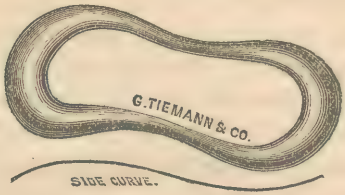


Fig. 7.

Figs. 6 and 7, reduced representations of the Protean Cushioned Pessary before and after moulding into shape. Fig. 6, as manufactured; Fig. 7, after pressing into shape.

the capital letter O. By compression, the light lines become the two lateral shanks, and the dark ones represent the cushions at each end of the long diameter. This instrument is mentioned incidentally in Vol. I, page 238, of our *Transactions*, but I did not then acknowledge it as my own. I hope I may not now suffer any loss of your respect, and that I may be forgiven for having invented a *pessary!* I seldom or never use this protean pessary in the nausea of pregnancy, but prefer always a simpler one—the soft-rubber elastic ring of moderate size.

I take occasion to repeat now, in connection with the application of this pessary for anteversion, the rule enunciated by me in 1875[1]—though acted upon for years previously, argued and more fully stated before this Society in 1876,[2]

[1] "Résumé of a Report on Position, Pneumatic Pressure, and Mechanical Appliance." Read April 23, 1875, at Savannah, Ga., before the Medical Association of Georgia.

[2] "Pneumatic Self-replacement of the Gravid and Non-gravid Uterus." Read in New York, June 3, 1876. See *Transactions American Gynecological Society*, vol. i, p. 231.

and again in 1882[1]—that no pessary or other internal support should ever be applied without first fully reducing the displacement; and, secondly, that no pessary should be applied in any other than the genu-pectoral position, this being the only posture in which a full and complete reduction can be secured.

Although in every publication made by me on the subject it has been stated, without discrimination, that "*all displacements* of the uterus are reducible by the postural pneumatic method, except in cases of adhesion and impaction," it has appeared to me that few or none seemed to recognize that anteversions had been among those claimed as subject to the genu-pectoral posture. It has been for this reason, and more especially at this time, because this obliquity is often the concomitant and the provocative of extreme nausea in pregnancy, that I have in this place given it for the first time so full a consideration.

For the better illustration of its reduction I have had two cuts made—one of non-gravid and one of gravid anteversion. These are from diagrammatic drawings carefully prepared by Dr. A. Sibley Campbell, over nine years ago, for that portion of the address which failed of preparation in time for the first volume of these *Transactions*.

In regard to the two other displacements—prolapsus and retroversion—the principles then set forth for the application to them of postural and pneumatic reduction, whether in the gravid or non-gravid uterus, appear to have been generally accepted and practised in this and other countries. I think there have been but few systematic treatises on gynecology issued since 1875 in which this postural method is not mentioned, and generally with approval, and a full recognition of its value in prolapsus and retroversion.

In this latter displacement I may say that, having to a certain extent discussed and illustrated the method of its reduction in a former paper before this Society, it can be

[1] See *Gynecological Transactions*, vol. vii. Discussion, p. 313. Meeting at Boston, September, 1882.

proper now to consider only those conditions of the obliquity which at that time were professedly excluded from the discussion as acknowledged exceptions to the rule of automatic restitution. These conditions, which I scarcely ever fail to mention distinctly as exceptions which apply as such to any of the three forms of displacement—prolapsus, anteversion, and retroversion—are adhesions and impactions.

In the present connection it becomes important to consider these two conditions, more especially impaction, for to it in larger degree, even when existing to but a moderate extent—socketing—may be attributed greater aggravation of the nausea, besides increased difficulty in its relief by postural reduction.

In this portion of the present remarks it will not be expected, therefore, that I consider the question of *unimpeded* pneumatic reduction so generally recognized as fully established, but only such measures as I have found beneficial or efficient in cases where revolution forward and gliding downward have been impeded either by adhesion or by one or other degree of impaction. These have unavoidably been glanced at while considering the *rationale* of postural reductions in anteversion.

ADHERED AND IMPACTED RETROVERSIONS.—IMPEDED REDUCTION.

I can not deny the existence sometimes of adhesions between the fundus uteri and adjacent structures which form its bed in the reclining obliquity; nor can I deny that such a morbid attachment would obstruct and render impossible its beginning to revolve at the time of the reversal of its gravity in genu-pectoral position. I think, however, it is a condition of extreme rarity—more often predicated in cases that have failed of reduction by inefficient methods than could be demonstrated in autopsic investigation of the same cases. I believe such instances will be found less and less frequent as genu-postural devices for replacement become more generally adopted. It will probably then be found that these apparently insurmountable adhesions that forbid the restora-

tion of the retroverted uterus are but impactions, or, to use a term not already appropriated, socketings of the fundus which *impede* but do *not* forbid the reduction.

This kind of impaction may exist in the non-gravid uterus, and will sometimes be found in the gravid uterus to impede revolution and reduction of the retroversion long before the increased growth of the womb has produced any degree of jamming in the pelvic cavity.

This impeded revolution of the fundus—whether in the gravid or non-gravid womb—is more apt to occur, like similar impactions of anteversion, in cases of long standing, or when there is, in the latter state, a retro-*flexion* exaggerating the backward inclination of the version; or, again, where an extreme degree of back-tumbling had been attained and had long continued.

It is the result of my own long observation, and probably the result, too, of the observation of others of like experience, that a certain degree of retroversion—any degree below horizontality in the erect position—once attained by gradual decline backward of the organ, is *never* spontaneously corrected except by some force acting upon it in the opposite direction, which may mechanically cause it to resume its vertical or anteverted direction as related to the plane of the pelvic area. There is but one *apparent* exception—a natural one—which, with analogous morbid conditions, as I believe, exercises this mechanical force to cause spontaneous restoration of the retroverted uterus. This is pregnancy and sometimes uterine fibroids, as the analogous morbid condition referred to. The occurrence of pregnancy in retroversion would be, more often than it is, the cause of serious and even fatal impaction from disproportion or jamming—utero-pelvic impaction — but that the condition itself becomes a remedy of the long-standing obliquity, and it is only in a comparatively few cases that the gravid uterus becomes *hitched* under the promontory, to remain there till serious impaction demands its dislodgment by art. If all retroverted conceptions foreshadowed gravid impactions, the aid

of the gynecologist would be invoked far more frequently than it is known to be at present.

As germane to our subject I may say that such gravid retroversions greatly enhance the local irritation and exaggerate the reflexes of the earlier months of pregnancy, and in such manifestations as nausea and vomiting, and a tendency to sensory and spasmodic predominance, as the growth and pressure advance. But, in the large majority of cases, quickening or ascent, though perhaps delayed or impeded, is still effected and comes to the relief of the exaggerated distress that had from the beginning been occasioned by the obliquity.

Notwithstanding the small percentage of danger that serious impaction will result, still, on account even of this small per cent. of so dangerous a condition, impacted gravid retroversion must ever be regarded with momentous interest. But, leaving the liability to grave impactions out of consideration, the importance of replacement and the favoring of early ascent can not be lightly estimated, should it be found to relieve the nausea and other distressing reflexes of the early months of pregnant women with wombs thus and otherwise abnormally directed.

As heretofore stated, the uterus, once retroverted by the ordinary causes,[1] remains reclined, with a tendency to increase its degree of declination. Long residence in this position, with the pressure, as it often is, accentuated by a flexion in the same direction, establishes for the fundus a bed, though, as I believe, very rarely does adhesion take place.

This bed or socket is made to begin in Douglas's *cul-de-sac* of the peritoneum, which it pushes down before it till, in the last degrees of decline, a distinct deep bag like the peritoneal sac of a hernial extrusion—of which, indeed, it is

[1] I may say that, in such retroversions as those in which the uterus had been suddenly forced back by violence, cases have been known in which the organ has sprung back into place spontaneously, by the resiliency of the ligaments and other structures, without a change of posture or by any other mechanical device. These, however, are rare and exceptional cases, not comprehended in the statement just made.

the legitimate analogue—is made, from which it is hard to extricate it even by any amount of unassisted inverted gravity. The extreme of this state is very uncommon; measurable approaches to it are by no means rare. In the minor degrees of this socketing, little or no obstruction is offered to pneumatic postural replacement if the reversal of the trunk, so far as can be made in the genu-pectoral position, be *strictly* observed.

In such retroversions as have sufficient socketing to impede fundal revolution, the woman being placed in the genu-pectoral posture, and air being allowed to enter the vagina, vaginal inflation and the draft of the viscera[1] cause a backward movement of the entire uterus. But in such cases the fundus does not revolve *forward* and downward, having the vaginal attachment at the cervix for its center of revolution; but, instead of this, as is the case in unimpeded reduction, the *cervix* revolves *backward* as drawn by the visceral mass, the socketed fundus *now* being the center of revolution in the segment traversed by the cervix in its backward movement. Adhesions of the fundus would be attended by the same result.

### GENU-PECTORAL POSTURE FALSELY TAKEN.

Failures in fundal revolution can not always be laid to the charge of inefficiency in the genu-pectoral posture, nor yet again to real impediments to uterine reduction. Particular stress has, on all occasions, been laid upon the importance of placing the patient in such a position as will secure the highest elevation of the pelvis "on perpendicular thighs" which is, at the same time, compatible with the greatest depression of the chest—pressing it *flat* on the same horizontal plane as that on which the knees are resting. This involves a concave line downward for the trunk and spinal column—a deep and decided *sway* of the back, "all bands being loosed, the abdominal muscles relaxed, and the patient breathing easily."

[1] Vide *Gynecological Transactions*, vol. i, p. 215, "Philosophy of Reduction."

It must be recollected the genu-pectoral posture is not an absolute reversal of the bearing of the gravity of the abdominal and pelvic viscera, but only the most complete reversal of this gravity that can be secured with the knees and chest resting on the same horizontal plane. It is one, however, which produces a *sufficient* reversal generally for all the practical purposes of uterine reduction. Any violation of the rules governing the application of this attitude to uterine reposition—though not fatal to success in all cases—will diminish its efficiency, and sometimes cause entire failure in the results, even when there is no adhesion or impaction, and but very little socketing of the fundus. The error may be made either at the anterior or at the posterior point of support. The first of these figures, from my former paper (see *Transactions*, vol. i), gives the correct bearings of the body, while the other two are violations of the correct outline, which will be readily apprehended without any particular description.

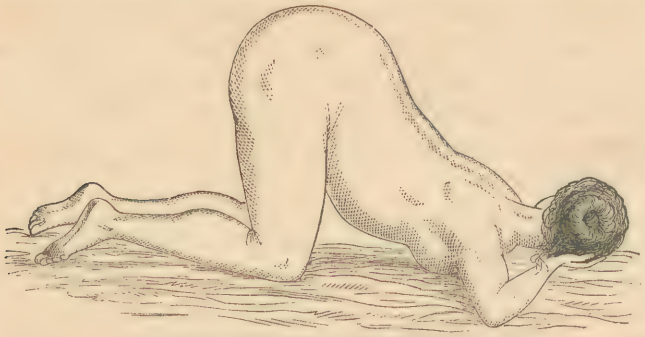

FIG. 8.—The Genu-pectoral Posture.

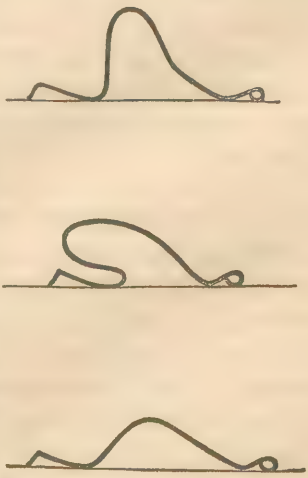

FIG. 9.—Outlines of the Genu-pectoral Position, and of Two of the Improper Deviations from it. The first outline indicating the correct position with the thighs vertical.

The falsity pertaining to the anterior point of support is quite as observable, and will be found hereafter fully as liable to impair the efficiency of the measure. In this, though the pelvis is elevated on upright thighs, the trunk fails in its acute or sudden decline, in the fact that *the breast* is not supported on the same horizontal plane, but is above it, while the head or face becomes the resting point. The least rigidity or restraint also in the diaphragm, or in the muscles of the abdomen, will be liable to disappoint us in the impulse expected from the reversal of gravity.

### STUDIES IN GENU-PECTORAL POSTURE.

Among those in Europe who have given careful attention and study to the genu-pectoral position since the subject was last discussed before this Society are Professor Alexander Russell Simpson and Dr. David Berry Hart, of Edinburgh. These distinguished gentlemen have made it the sole and special subject of a folio pamphlet, in which are given the considerations resulting from the study of the cadaver of a woman frozen in the genu-pectoral position. So striking, laborious, and enterprising a contribution to the subject of the genu-pectoral position in uterine replacement has my cordial acknowledgments, and I must here give careful consideration to some of the conclusions arrived at, as well as to the ingenious and elaborate method in which the researches have been made.

In this work it appears that the authors have never for a moment suspected that, in the general claim made by me, all displacements were amenable to reversal of gravity; that it could have been meant that anteversions were among those possibly reducible as an effect of this reversal in the genu-pectoral position. They admit that prolapsus is probably amenable to it, but their principal discussion and study appear to be devoted to such benefit as may be obtained from it in retroversions both of the gravid and non-gravid uterus. "The practical uses of the genu-pectoral posture seem to be more limited than many gynecologists imagine. For the

passage of pessaries, unless in prolapsus uteri, it is not advisable to place the patient in this posture; and we are unable to see what good can ensue by making a patient nightly assume this posture in order to distend the vagina by passing Campbell's tube, except in the case of congested ovaries. As a natural phenomenon, however, it presents many interesting features, on some of which we hope this monograph has thrown some light."—P. 11.

Although the above conclusion of the distinguished authors of this work strikes out—as "not advisable" in the one case, and as of a "good they are unable to see" in the other—two of my most valued applications of genu-pectoral posture—namely, the application of pessaries *only after reduction*, and nightly self-replacement—without meaning any disrespect, I must leave this trenchant conclusion unanswered till, by further examination of their method, I can determine whether the abolishment of the teaching, by which I must have misled many others, be well founded or not.

Although, as I have believed, the profession generally have fully accepted the genu-pectoral position as a means by which the entire plan of uterine reduction has been reorganized, greatly simplified, and rendered more efficient, I am unacquainted with any one besides these gentlemen who has, since my own initial labors—reported here ten years ago—attempted so profound and thorough an investigation of the subject. These investigations are recorded in a folio pamphlet inclosed in boards, of most excellent print and well illustrated. The following title gives us the character of the researches: *The Relations of the Abdominal and Pelvic Organs in the Female.* Illustrated by a full-sized Chromolithograph of the Section of a Cadaver Frozen in the Genu-pectoral Position, and by a series of Wood-cuts. By Alexander Russell Simpson, M. D., F. R. S. E., Professor of Medicine and Midwifery and the Diseases of Women and Children in the University of Edinburgh; and David Berry Hart, M. D., F. R. C. P. E., Assistant to the Professor of Midwifery in the University of Edinburgh. Folio,

pp. 11. W. and A. K. Johnston, Edinburgh and London, 1881.

In this very imposing pamphlet, the results have been made the basis of similar conclusions as those therein arrived at in a work republished in this country,[1] though the distinguished authors appear to recognize in the genu-pectoral position a subject of very considerable interest and of *novelty* as a field for active and profound investigation; and, though they seem to have abandoned the use of dorsal *decubitus* and Simpson's sound almost entirely as a means of uterine replacement, substituting hooks to the cervix, and rectal inflation, while the patient is in genu-pectoral posture, yet they positively deny, as the result of their investigations on the frozen cadaver, that the entrance of air into the vagina of a woman in the knee-breast posture is capable of reducing a retroverted uterus, whether in a gravid or non-gravid condition; nay, more than this—they assert that vaginal inflation in the case of a woman in this position renders the retroverted uterus more retroverted, and the anteversion more anteverted. Such a conclusion, so confidently announced, will strike with surprise the many observant practitioners, in this and other countries, who, for the past ten years, have been relying upon this method as an efficient means of uterine reduction, in both non-gravid and gravid retroversions. Some of them may question the correctness of the opinion.

There is nothing so apt to gain our acceptance and ready credence as the report of carefully arrived at conclusions, reversing even a well-established opinion in regard to an alleged result; and still more apt is our acceptance to be given to this revision when the statements are made after such confirmation as is afforded by experiments on both the living and the dead body, and then a post-mortem dissection of that body after elaborate and careful preparation, especially when

[1] *Manual of Gynecology.* By D. Berry Hart, M. D., F. R. C. P. E., etc., and A. H. Barbour, M. A., B. Sc., M. B., etc. William Wood & Co., New York, 1883. American edition, 2 vols.

adjudicated by a plausible appeal to well-known and familiar philosophic principles. All of these have been brought into requisition in the present case: the experiment on the living, its repetition on the dead, its final assumed confirmation by dissection, and, in the end, the establishment of the conclusion arrived at by its coincidence with well-recognized "analogous physical phenomena" as announced by the lecturer on medical physics in the Extra-Academical School of Medicine, Edinburgh. But as an arch, however massive, with one crumbling stone, or a ponderous chain with one weak link, can be no stronger than its weakest part, so this elaborate argument, having not only one but many feeble links, must fail to stand the strain of even the lightest weight that investigation will put upon it.

In the present case it would have been unfortunate if the conclusions of Drs. Simpson and Hart, as arrived at as the result of their study of the frozen cadaver of a woman, should be found to be impregnable. Though the genu-pectoral position would still have been left as a most valuable adjunct in the procedure of uterine reduction by the gynecologist, who according to these authors would properly apply hooks and rectal inflations to accomplish restoration in retroversion, yet the induction of automatic reduction by the woman herself, or self-replacement, now so widely recommended and found so beneficial, would have properly been abandoned as a futile maneuver—as an aggravation rather than as a relief in retroversions.

There are some experimental researches which can be made only on the living subject, and that can not be repeated on the dead or verified by post-mortem examination. Automatic reduction of the deviated uterus, whether gravid or non-gravid, belongs to this class of subjects in experimental research. It will at once appear to any one that a process which in a *living* woman, after the fullest reversal of the bearing of gravity that can be secured "on the same horizontal level," requires complete relaxation of all the muscular walls of the abdomen, which requires all bands of

clothing to be loosened, and also, as one of its conditions, that the woman shall breathe easily in order that alternate relaxation and contraction of the diaphragm shall favor the result, would not be properly and adequately conditioned if performed on the dead subject with stiffened, stark, and rigid tissues of the *rigor mortis*, with viscera of pelvis and abdomen coagulated and stuck together. The weight of the abdominal mass, on a moderate reversal of the trunk, *might* by "visceral draft" draw some air into the vagina, but that the inconsiderable weight of the uterus would cause it, under such circumstances, to break away from the coagulated bed in which it had lain, and revolve on the stiffened hinge of its cervico-vaginal junction, is a feat of automatism which no one could expect after the slightest consideration of the subject.

For reliable results from a post-mortem study of a frozen woman in the genu-pectoral position, I can suggest no other expedient by which our conclusions could be made instructive than that a woman with retroversion be placed *during life* in the genu-pectoral posture and air allowed to enter the vagina, and the study made after freezing her to death in this position. Under any other conditions I can not understand how one position of the body can be better than another to study "the relations of the abdominal and pelvic organs" as affected by genu-pectoral posture.

But the unsound block in the towering edifice is the foundation-stone; the fatally weak link in the argumentative chain is the very first. The attitude adopted for the study of the genu-pectoral position, and by which to prove its inefficiency in the reduction of the retroverted uterus, was, after all, *not* the genu-pectoral position, but one fatally violative of its fundamental rule. The thorax does *not* "rest on the same horizontal plane as the knees," but is suspended far above that plane, as will be seen by the diagram we here copy from the pamphlet.

In the use of this imperfect substitute for the genu-pectoral posture it is not surprising that failures have frequently

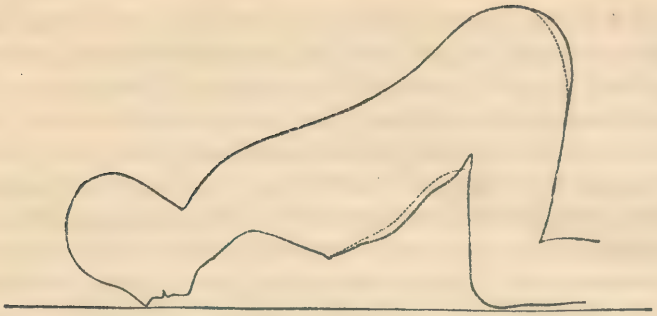

FIG. 10.—*Incorrect* representation of the Genu-pectoral Posture, from Simpson, Hart and Barbour. "Diagram based on lithographic plate, and silhouette tracings of nude female in genu-pectoral posture. The dotted lines show the contour of the pelvic floor and anterior abdominal surface when the vagina is undilated; the plain line, when vagina is dilated." (After Hart and Barbour's reduced copy of Simpson and Hart's diagram—the horizontal line being here added to show at a glance in how far the breast fails to reach the plane of the knees.)

occurred under the observation of the authors, and that additional measures, as hooking forward of the cervix and inflating the rectum with Higginson's syringe, should have been found necessary in order to accomplish the desired result. The true or effectual genu-pectoral position is not one in

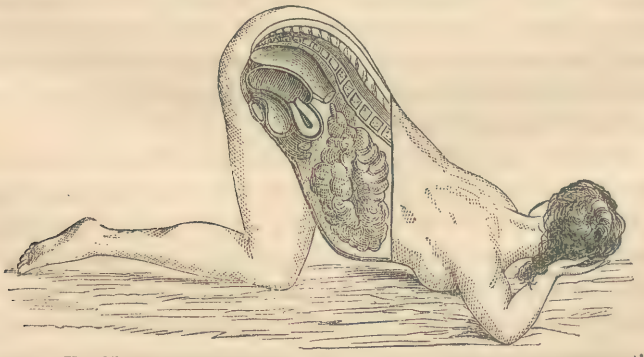

FIG. 11.—The Uterus Reduced in the Genu-pectoral Posture with Pneumatic Pressure. (Diagrammatic.)

which "the breast is as near the couch as is compatible with comfort" (*op. cit.*, p. 7), but one in which the body must be inclined to a very *uncomfortable* degree—the breast *flat* upon the couch, down to the level of the knees—to cause

such inclination of the trunk downward as will on the same horizontal plane invoke a sufficient reversal of the bearing of gravity as will initiate movement in a body of so small a ponderance as the non-gravid uterus, and that will throw the center of suspension to the cervico-vaginal attachment. Less than this may often invoke draft of the viscera, and sometimes replace the gravid uterus if not adhered, impacted, or socketed; but it will not often replace a non-gravid retroversion even when not socketed, or when socketed to a very slight degree, unless it has been frequently replaced previously by automatic reduction or otherwise.

METHODS THAT CAN BE ADOPTED IN IMPEDED REVOLUTION, FROM SOCKETING OF THE FUNDUS, OR FROM UTERO-PELVIC IMPACTION IN PREGNANCY.

*Elevation of Knees on Pillow.*—The advice of the Indian woman who counselled her mistress and promised she would find relief in uterine displacement by getting out of bed each day *head-foremost*—resting her hands on the floor, while her knees remained on the edge of the bed—comprehended an exaggerated reversal of gravity. While neither the patient nor her adviser understood the philosophy of this procedure, yet one of the simpler expedients in impeded fundal revolution is an elevation of the posterior support of the partially inverted trunk by placing a pillow under the knees of the patient, when the same horizontal plane fails to effect the object, after the entrance of air into the vagina.

*Abdominal Succussion.*—It must be understood that the patient is fairly and strictly in the genu-pectoral position—abdominal muscles relaxed and hanging, as it were, the vagina inflated by such amount of air as will enter—and yet revolution of the fundus does not take place on account of that degree of partial impaction we call socketing.

The palm of the hand now placed flat against the pendulous abdomen at or below the umbilical region, and suddenly, but not roughly, moved up and down, so as to lift and let fall the muscular and visceral mass—with or without

any additional elevation of the knees—will cause the passage of air alternately in and out of the vulva. I have called this procedure "abdominal succussion," and I have found it greatly to facilitate fundal revolution and complete reduction in both anterior and posterior displacements that have been impeded in their starting.

*Rectal Inflation.*—When such a reversal of the trunk is made as that of a woman in the genu-pectoral posture, *any* cavity or *potential cavity* near the summit, as well as the collapsed vagina, with a sufficiently near relation to the great abdomino-pelvic cavity of the body to be influenced by it, will be caused to *inhaust air* by the powerful draft of the descending viscera, the bearing of gravity in which has been reversed. In a penetrating wound of the abdomen near this summit, as in the iliac or lumbar region, air would be sucked into and fill the peritoneal cavity by this same visceral draft; by different instrumentalities—the respiratory muscles—acting upon a closed bony cavity filled by the lungs, a penetrating wound will allow air to enter the pleura and compress the lungs by overbalancing that entering the rima glottidis.

The rectum is one of those potential cavities which, in the genu-pectoral position, becomes placed at the summit of the elevation, and subject to the powerful influence of visceral draft, to cause its inflation when the sphincter is dilated.

This very common principle has been variously illustrated in all works on physics. In our first presentation of the subject (April, 1875) I used the air-pump of a cupping case to exemplify the draft of the viscera and its resulting phenomena when a patient is placed in the genu-pectoral posture.[1]

The downward bearing of the piston and book attached will represent the weight of the visceral mass, sustained by the non-equilibrated column of air in the lower chamber of the barrel of the instrument. The possible or potential cavity above the piston will represent the collapsed vagina and collapsed rectum. The thumb, which prevents the entrance of

[1] *Résumé* of a Report read at Savannah, etc., p. 15, April 23, 1875.

air and restrains the equilibrium, represents, in either case, the closed vulva and the sphincter ani. The raising of the thumb would illustrate the effect of letting air into the vagina or into the rectum. Each of these potential cavities can be made *actual* cavities, and can be fully inflated by respectively separating the labia or dilating the sphincter ani.

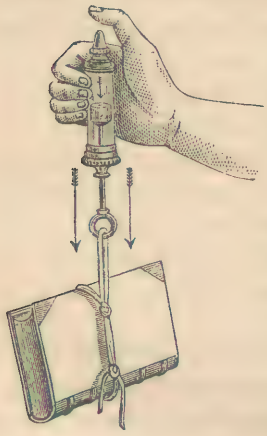

Fig. 12.—Breaking the Suction.

The availability of rectal inflation or distention in impeded reduction of retroversions in knee-breast posture was considered in the first remarks made on the subject:[1] "I have known for a long time that the rectum, no less than the vagina, could be made, in the genu-pectoral posture, the subject of wide distention by air-pressure *per anum*. In a case of reputed stricture of this canal, which, on examination with my distinguished friend Dr. Joseph A. Eve, we found to be one of retroversion of the uterus, I carefully experimented and noted the effect of air-entrance—first into the rectum, and then into the vagina—upon the position and direction of the displaced womb.

"The vagina was kept strictly closed until after an observation upon the rectum. The rectum was, to all intents and purposes, converted into a colpeurynter. The distention of its walls had the effect, in this case, of partially dislodging the fundus from the hollow of the sacrum (there was no impaction), as I suppose Braun's colpeurynter would do if inflated within this cavity. The *position* of the displaced womb was considerably changed, but its *direction* not at all. After carefully considering the condition of the cavity and the relation of the fundus uteri to the face of the sacrum, the obliquity was instantly corrected by the additional admission of air into the vagina.

[1] *Op. cit.*, 1875.

"One of the uses which, I think, can be made hereafter of rectal distention, as above described, is that it may offer a facility to reposition in certain cases of retroversion; that it may serve, as in the above instance, where there is neither adhesion nor impaction, to *dislodge* the fundus, thereby making restitution by vaginal inflation and inverted gravity easier and more certain. Alone, it can never be made to effect the reposition of the backward obliquity."—*Op. cit.*, p. 9.

By the above it will be seen that rectal distention, claimed by Drs. Simpson and Hart as one of the expedients necessary to supplement genu-pectoral posture and vaginal inflation, had been long ago recognized by me, and its value estimated as offering *facility* in some cases of retroversion.

### THE COLPEURYNTER IN GENU-PECTORAL POSTURE.

The application of Braun's colpeurynter never contemplated, as is well known, the genu-pectoral position; and yet in any other posture it had been found inefficient to secure reduction, and for a long time it had been comparatively but little resorted to. It will be seen hereafter that its action in connection with inverted gravity, and after the weight of the heavy abdominal viscera has been removed, can be made available, and in the most advantageous manner.

In the utero-pelvic impaction of pregnancy, which has so often resisted the efforts and taxed the ingenuity of the best gynecologists when the attempt at reduction has been made in dorsal *decubitus* or semi-prone posture, the inflation of the colpeurynter or other air-bag within the rectum while the patient is in the genu-pectoral posture will promptly dislodge the fundus from the hollow of the sacrum and bring it under the influence of inverted gravity, by which it is immediately restored to its proper position. The following cut presents a view of this perplexing and sometimes unmanageable impaction of the gravid uterus.

From the fact that the rectum rests in the hollow of the sacrum, and is flattened against the bony wall by the fundus of the gravid retroverted uterus, any distention of the rectum

will cause a forward movement of the fundus. As we have seen, the spontaneous entrance of air from dilating the sphincter is often sufficient to dislodge it and adjust it for revolution as soon as the vagina is inflated. Injecting air or

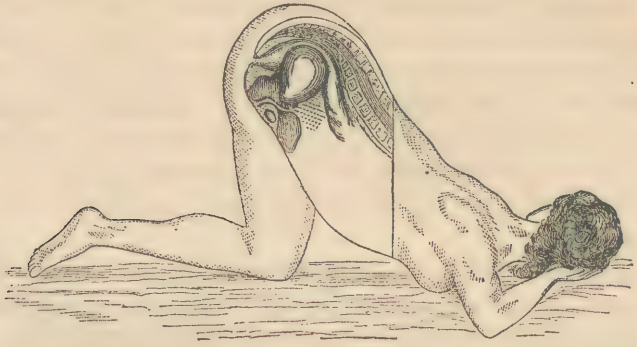

FIG. 13.—Gravid Retroversion in the Genu-pectoral Posture, before Reduction. (Diagrammatic.)

water into the rectum, as recommended by Drs. Simpson and Hart, will make no greater distention than this, as the air or water thus injected could not overcome any decided resistance, and would pass the sigmoid flexure and fill the colon.

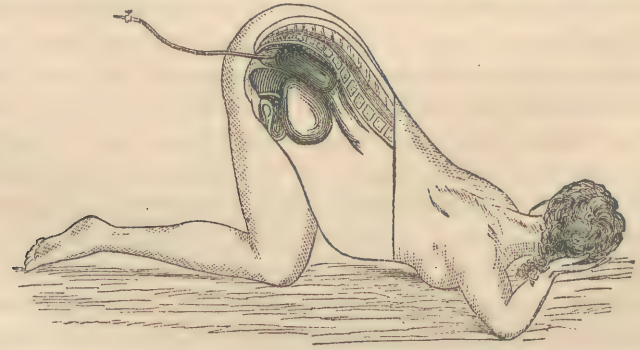

FIG. 14.—Gravid Retroversion in the Genu-pectoral Posture, after Reduction with Barnes's Dilator in the Rectum. (Diagrammatic.)

In decided impactions, as that of pregnancy, a far stronger displacing force is generally required than the air which enters spontaneously or that which can be retained by injection.

The empty bag must be carried above the equatorial line of the uterine globe, and then, on its distention with air or water, the fundus will be dislodged and subjected to inverted gravity.

In a case, to be related hereafter, in which firm impaction prevented the reduction of the gravid uterus, Barnes's dilator was used in the absence of Braun's colpeurynter, at the suggestion of my friend Dr. J. S. Coleman, who was in attendance with me in the case. I regard this instrument as preferable to the colpeurynter, and have presented a diagram of its application as prepared for this paper by Dr. A. Sibley Campbell.

A Sims speculum to dilate the sphincter ani and a uterine sound by which to push the bag in place are convenient preliminaries for its distention with water or air by a Davidson syringe.

But, as has been frequently stated in other portions of these remarks, real utero-pelvic impaction or jamming, that would require such powerful adjuncts to inverted gravity as that above described, is far less frequent than is often supposed by those who attempt reduction of gravid retroversions in the ordinary postures. A gravid retroversion which may resist reduction by all other means in other postures, and give rise to the conclusion that impaction or adhesion was the obstruction, will often, indeed in the majority of cases, yield at once to reversal of gravity and pneumatic reduction in the genu-pectoral posture, all the disturbing symptoms, whether of threatened abortion or of hysteria or of vomiting, subsiding at once on the full reduction of the uterus.

In the following case no other means were brought in requisition to reduce the gravid uterus, as I had long since abandoned attempts in all other postures, pneumatic reduction seldom requiring any additional aid:

Case I. *Gravid Retroversion with Threatened Abortion promptly relieved by Postural Pneumatic Replacement.*—I was called to Mrs. A., who had been for some days confined to bed and suffering great discomfort in the pelvic regions. She had

frequently recurring uterine pains, and was more or less troubled with rectal and vesical tenesmus. She had also a sense of weight as though constant pressure was being made upon the lower bowels. There was considerable mucous discharge colored with blood. From her own account there could be little doubt that she was in the second or third month of pregnancy. This being accepted as the fact, her symptoms indicated immediately impending abortion. She had had one or more miscarriages previously. In order to relieve her distress, she had taken opiates freely. Laudanum or McMunn's elixir not controlling the pain, the doses had "been increased to an extent beyond which," she said, "she could not go," as they had rendered her "giddy and stupid."

Finding, on examination, that the case was plainly one of retroversion of the gravid uterus in the earlier months of pregnancy, I advised her to assume carefully under my directions the genu-pectoral position. While in this position I carefully examined again with the index-finger. The cervix uteri was found tilted down against the vesical wall of the vagina, the fundus remaining up in the hollow of the sacrum. The patient was now directed to relax the abdominal muscles and to "breathe easily." The index- and middle-fingers of the right hand were introduced with palmar surfaces upward. The labia were separated, and the perineum at the same time lifted up toward the coccyx. Air at once entered the vagina, the gravid uterus instantly retired, the reduction being as complete as it was sudden. The patient was somewhat startled at what she described as "a sudden movement inside of her," which she said gave her a sharp but momentary pain. She expressed the greatest relief at the immediate subsidence of her discomfort and unpleasant symptoms. The opiates were discontinued and not resumed.

Fearing a recurrence of the displacement, her husband was requested to procure a pneumatic repositor, in the simple method of using which I carefully instructed him and the patient. This was to have been applied in knee-and-breast posture in case of any return of uterine distress.

On calling the next day, I found that this lady had experienced no return of pain or sanguineous discharge. She was

out of bed, against my advice, on the third day. Her husband subsequently informed me that she had had to resort to self-replacement more than once since the occasion on which I had relieved her by digital pneumatic reduction.

She was delivered, at full term, of a healthy living child. No pessary was used in the above case.

In the foregoing instance I believe abortion would almost certainly have resulted had reduction of the gravid displacement not been made. I believe, further, that any forcible or direct efforts made upon the womb itself, such as would have been required for reduction or for introducing and correcting by a pessary sometimes used for this purpose in any of the ordinary positions, would have endangered the continuance of pregnancy. And yet, with inverted gravity, conditioned by air-pressure, how speedy and thorough was the relief afforded!

I will here say that, of course, there are many causes which operate to produce abortion and miscarriage independently of and unconnected with either downward, backward, or forward gravitation of the gravid uterus. In these, neither pneumatic reduction nor the more permanent correction afforded by any form of intra-vaginal mechanical support can contribute much to stay the progress of the impending calamity. It is needless even to enumerate these causes, as they are familiar to all experienced practitioners, and, moreover, do not come within the purview of remarks which I have tried to restrict definitely to that class of cases—quite a large one—which I am willing to claim as, in one way or other, amenable beneficially to automatic reduction. My practical remark is this: Even in many of these other cases, it being difficult to estimate the extent and the influence of gravid displacement in determining the result fatal to pregnancy, I, whenever it is practicable, seldom fail, unless advance has previously determined the matter, to *attempt postural pneumatic reduction as one of my first and most hopeful expedients in arresting abortion.* On the other

hand, retroversion of the gravid uterus may render, as is well known, expulsion impossible, thus constituting a condition endangering the life of the woman.

In a discussion of the subject of gravid retroversion, held December 4, 1874, before the Obstetrical Society of London, and reported in *The Obstetrical Journal of Great Britain and Ireland*, vol. ii, No. 22, January, 1875, the dangers and difficulties attending retroversion of the gravid uterus are well shown. In this discussion Drs. Robert Barnes, Brunton, Aveling, Galabin, Gervis, Braxton Hicks, Edis, and others, were engaged. A great variety of ingenious expedients were offered, and among them reduction of the womb by aspiration, by Dr. Barnes. Dr. T. Braxton Hicks proposed as one of his expedients the inflation of an empty air-bag in the vagina, with the patient on her side. We can but believe that the application of the Barnes dilator in the rectum, after the manner represented in Fig. 14, with the patient in the genu-pectoral posture, would afford the best chance of relief in the more difficult of this class of cases. As will be seen, without the bag or other adjunct the genu-pectoral posture and simple vaginal inflation will sometimes suffice to secure relief in conditions apparently very serious.

GRAVID RETROVERSION, WITHOUT UTERO–PELVIC IMPACTION, OBSTRUCTS A PREMATURE LABOR.—AUTOMATIC REDUCTION PERMITS EXPULSION OF THE FETUS.

Von Ritgen, as we have seen (*Transactions of the American Gynecological Society*, vol. i, p. 199), attributed great value to position as a "mechanical aid" in cases where "pendulous abdomen" or other abnormalities gave rise to malpositions of the gravid uterus inimical to the progress of labor or obstructive to its completion. There could be no more insurmountable obstruction presented to the expulsion of the fetus than that of the bony wall of the pubis against the os tincæ during the parturient efforts of a retroverted gravid uterus. The following case appears to have presented this kind of difficulty. The brief statement to be found in

the note from my highly valued friend Major Harry Hammond, formerly Professor of the Physical Sciences in the University of Georgia, will be read with much interest, though not perhaps without a reminiscence and a smile at his gleeful and gratified reference to one of the modern English *classics :*

REDCLIFFE, S. C., *September 21, 1875.*

DEAR DOCTOR : I have only been able to read a very little of the *brochure*[1] you were so good as to give me, but that little produced so marked a result that I must tell you of it. A woman on my premises had been confined to her house for more than a month, expecting a miscarriage hourly. Over and over again laudanum and the midwife were called for, and the latter has been in constant attendance for days. Yesterday all parties became alarmed and sent for Dr. Eve. He came, and determined her case to be *retroversion.* He prescribed for the case, and recommended the midwife to try replacement in the position you advise. After night, the husband comes in, greatly distressed ; his wife is out of her head with the pain, and in convulsions ; he wants a horse to go for the doctor. I visit the patient for the first time, and find all the negro women in the neighborhood there, to see her die. The poor creature seems to be in terrible agony. If you had been in reach, of course I would have sent for you. Failing that, I determined to use, rough at a venture, as much of you as I had at my command ; so I sent to the house for your pamphlet. I open it at the illustrations, and call up two of the most intelligent attendants and carefully explain to them the right position, etc., and direct them to try it ; and, as they begin operations, I leave (!). In a very few minutes the woman was easy, and it could not have been more than fifteen minutes when she was delivered of her abortion, and has been doing well since.

Such simple and speedy relief, after six weeks of suffering, seemed like magic to the assistants, and I felt the sort of gratified surprise which Jo, in *Great Expectations,* experienced

[1] *Position, Pneumatic Pressure, and Mechanical Appliance in Uterine Displacements,* Savannah, April, 1875.

when he found "the J and the O in the newspaper, and knew it spelt Jo."

I am going through the pamphlet without delay.

Very truly yours, HARRY HAMMOND.

To Dr. H. F. Campbell, Augusta.

The above familiarly related case, though clearly not written or intended for publication, I have adduced on account of its striking peculiarities. In a conversation afterward with Major Hammond, I inquired as to the probable *date* of gestation, and also as to the character of the convulsions. He states that the fetus was probably one of over four months. A peculiarity of the father, in the form of supernumerary fingers, was recognizable in the fetus. He states that the convulsions were probably *eclamptic*, as the woman was unconscious and stertorous for some time after his coming into the room. Here again, serious as were all the symptoms, there could have been no real *utero-pelvic* impaction—and yet when would this woman have been delivered without automatic reduction acting through the reversal of gravity?

Professor Hammond is the eldest son of the late Governor James H. Hammond, former Senator from South Carolina. Though an earnest cultivator of science, and deeply read in medicine, he does not practice his profession; and, as it appears from his note, most averse of all would he be to engage personally in an *obstetric operation* such as he in this instance advised and directed with the happiest results.

The two foregoing cases have been selected from some of the earlier notes of our observation to illustrate, first, the liability of displacement to provoke expulsive uterine contraction, and, secondly, the great value of postural pneumatic reduction in extricating the gravid uterus in order that a desirable result, different in each case, might be obtained. The one now to be described will be recognized as one of a class of cases in which extreme danger is admitted, and in which the difficulty of replacement, by any of the ordinary means and in any of the ordinary positions of the body, will be generally acknowledged.

Case III. *Gravid Retroversion at or near the Fourth Month of Utero-Gestation, with Enormous Distention and a Sacculated Condition of the Bladder.*—Called in consultation by Drs. J. A. and S. C. Eve. The patient, a dark mulatto woman, tall and well-proportioned, aged about forty-seven years, had borne children. One of them, a woman of over twenty-five years, was then present. She had supposed herself fully in the menopause, though sometimes, at long intervals, troubled with indications. Her appearance indicated a woman of more advanced age. She was greatly emaciated, feverish, and confined to bed.

For some weeks previous to our present visit she said that she had felt much pelvic and abdominal distress, had suffered greatly from rectal and vesical tenesmus, but had continued to pass both feces and urine, though not without pain, still in apparently sufficient quantities.

As on examination, by Dr. Sterling C. Eve some days previously, we now found the abdomen very much swollen in the region of the umbilicus, but in the iliac and lumbar regions there were well-defined tumors—the larger, on the left side, about the size of a cocoanut, that on the right somewhat smaller. These tumors, on palpation, conveyed to the hand the sensation of fluid filling cysts in these regions. The same character of palpation marked the surface of the hypogastric region even up to the umbilicus. Examination *per vaginam* encountered prolongations of this cyst downward into the pelvis, apparently displacing the uterus and tilting up the neck toward the pubes, where it was somewhat tightly pressed by one of these prolongations against the upper wall of the vagina. The posterior *cul-de-sac* of the vagina was obliterated, and the enlarged fundus of the womb could be here felt retroverted and firmly fixed. The entire assemblage of features presented by the case resembled one of ovarian cyst in which the accumulation had displaced and depressed a somewhat enlarged womb.

After the most careful inquiry and particular exploration, the possibility of pregnancy, though suggested to our mind, being apparently out of the question, to relieve the woman of the extreme distention, hoping thereby to lessen the irritative fever, tapping either in the vagina or in the left iliac region

was determined on. Strict inquiry being made again as to the passage of the urine, both the patient and her mother, an intelligent old woman, assured us positively that she had passed water quite freely more than once each day. Preparatory to tapping, it was suggested that Dr. Sterling Eve, whose patient she was, should apply the catheter. Our first well-grounded suspicions as to the true nature of the case were now awakened. The urine flowed freely, but not with any remarkable force. It was dark-colored at first, but soon became darker and finally black, and obviously largely mixed with disintegrated and putrescent blood, extremely offensive, filling the room with a stench and leaving an enduring and intolerable odor upon the hands. Thirteen large coffee-cupfuls—at least six pints—were voided. Pressure had to be made over the abdomen to keep up the flow. The tumors rapidly subsided on evacuating the bladder, as did also the cysts projecting into the vagina. The woman expressed herself as greatly relieved by the enormous, and to her evidently most unexpected and unaccountable, discharge of urine. Many shreds of mucous membrane, some quite large, were every now and then clogging the flow of the urine. These were, as we found afterward, ragged fragments of the exfoliated lining of the bladder.

Our examinations were now diligently repeated under the light of these new developments. The womb, now more accessible, was found in a position of extreme retroversion, as was previously suspected, the fundus being firmly fixed in the hollow of the sacrum. Further inquiries as to menstruation developed that for a year or more past she had had, at long intervals, either slight sanguineous discharges or hemorrhages. Besides this, other circumstances favored the probability of pregnancy.

Whatever might be the exact condition, an immediate reduction of the retroversion, if possible, was plainly indicated. The patient, though feeble, had been able to get up to evacuate the bladder and rectum when necessary. She was now assisted somewhat, and partly held up in the genu-pectoral position. The *fourchette* and recto-vaginal septum were forcibly elevated, and, without any difficulty, the enlarged uterus dropped at once out of the hollow of the sacrum, and was felt through the thin, flabby wall of the abdomen near to the umbilicus. There cer-

tainly was not the least impaction after the removal of the urine from the bladder.

Dr. Eve continued to visit her. He found it necessary to use the catheter daily afterward for many days, sometimes drawing off a considerable quantity—often over two pints. During this attendance, some quite large patches of mucous membrane were drawn away through the urethra with the fingers.

This woman did not miscarry, though her health improved but little. She passed from under Dr. Eve's observation. Her mother, herself a midwife, informed me, many months afterward, that she continued on to full term and gave birth to a small dead fetus, dying herself within a month after parturition.

The above case, it will be observed, presents all the marks of and is identical in nearly all its features—especially that of vesical distention—with many in which *utero-pelvic*[1] impaction has been supposed to be the insurmountable cause of the womb's fixity under the sacral promontory; and yet, on the removal of the immense collection, which probably initiated the retro-displacement and then kept the womb firmly wedged in the hollow of the sacrum, automatic reduction was easily evoked by postural pneumatic equilibration. It is plain here that, with all the disastrous consequences of retroversion, there was actually no serious impaction from disproportion between the contained uterus and the containing pelvis. It was loose enough to *fall out* by its own weight.

[1] The term *utero-pelvic impaction* is necessarily supplied here and elsewhere in this paper, I hope admissibly, to define the difference between impaction caused by the pressure of other organs—as the distended bladder, or by downward visceral muscular and atmospheric pressure, or by socketing—and that, on the other hand, which in many cases, without doubt, results from the entire and tightly fitting occupation of the pelvis by a womb so much enlarged by advanced pregnancy, or from other causes, as to have become jammed in its cavity and retained below the promontory of the sacrum. When the contained uterus is too large for the imprisoning pelvis we have what constitutes utero-pelvic impaction.

Other cases of gravid retroversion will be found in that portion of our remarks which considers the prolonged nausea and vomiting of pregnancy.

As a question of incidental interest, it may be added that it is probable that in the free daily evacuations of the bladder she only passed what is called "the overflow" of an enormously distended and paralyzed bladder.

### THE HYSTERO-DYNAMIC REFLEXES OF PREGNANCY.—PROLONGED NAUSEA AND VOMITING.

That the pregnant woman is often the subject of a peculiar and exalted nervous excitability, both direct and reflex, is obvious and familiar to every one who has given even a casual attention to the ordinary phenomena of this condition. From the trivial fancy to the "longing," which grows into a *possession* or a mania; from the evanescent twinge to the persistent pangs of neuralgia; from the passing qualms of morning sickness to the unending nausea that starves, and the vomiting that threatens life; from the fretting dysuria and scarcely noticeable puffiness of face and limbs to the albuminuria, the toxemia, and the dropsical bloat; and, lastly, from the occasional spark and tremor to the bewildering flash and frightful eclampsia of childbed—we can make up the lighter and the darker shades of a complex though familiar picture which portrays and characterizes the woman, and her alone, and *only* during her nine months of utero-gestation.

It would be an interesting and instructive exercise, if not a novel one in the field of research, to note the varied modifications of functional phenomena as they are presented during pregnancy. To differentiate and classify these, and to trace each one to the source of its development and activity, would be an accomplishment of much importance, and one calculated to clear away many of the obscurities which at present embarrass our interpretation of some of the exhibitions which characterize what we now designate as the morbid conditions of pregnancy.

As the basis of such a classification of phenomena, it would be found that every department of the nervous system would be comprehended—the intellectual and the emotional, no less than the organic, the sensory, and the motor; for in

them all the unusual nutritive changes, at that time dominant in the system, serve as a powerful factor in awakening their activity and in exalting both their direct and reflex excitability.

The state of the blood and tissues, or, in the language of a past era, of "the fluids and solids," which *conditions* such exalted excitability, has been heretofore discussed in a paper relating to a set of phenomena closely allied to our present subject:[1] "But it may be asked, Why, in the pregnant condition particularly, should we find this irritability, or predicate this reflex responsiveness of the ganglia to both internal impressions through the blood, as well as to external impressions through any of the sensory nerves? The cause of this condition, we have used a term, every day becoming less familiar, to designate: 'Increased polarity of the nerve-centers,' if stated, we believe, would be perfectly comprehensible, but, being none the less theoretical on that account, it is inadmissible except as an hypothesis. In the pregnant condition the demand upon the woman's resources of nutritive supply are greatly increased. That she is, in certain particulars, temporarily endowed with a nervous apparatus, correspondingly enhanced in power to answer such demand, the investigations of Dr. Robert Lee, of London, establishing the *rationale* of the increased growth and muscular power of the uterus, most unanswerably demonstrate. Ganglia of the womb, before undiscoverable, become rapidly developed, both in size and activity, to a degree commensurate with the control and with the activities they are to give to the enormously developed vascular, muscular, and nutrient endowments of the gravid uterus. . . . With all this before us, the greatly enhanced nutrition everywhere, with this plainly indicated teleological plan, by which increased nutrition and power, as in the womb, are made to rest upon a temporarily organized apparatus of nerve-force, why may we not legitimately predicate an analogously increased nutrition and normally in-

[1] "Blood-letting in Puerperal Eclampsia, Pathology, and Therapeutics," etc. *American Journal of Obstetrics*, August, 1876.

creased polarity in the cerebral and basal ganglia of the encephalon"—and, we here add, *spinal* centers—"in order that resources of nerve-force may be engendered in amounts adequate to the sensory, the motor, and the nutrient supply which the general system is, during that time, called upon to yield? Such, in the want of demonstrated proof, we can only say we believe is necessarily the actual and normal condition of augmented nervous apparatus for the production of an amount of nerve-force adequate to the augmented demand. This may be said to render the brain and spinal system of the pregnant woman a highly polarized magazine of potential force, ever liable to become actual and uncontrollable whenever it is awakened into action by any of the imminent conditions of quality or quantity of the blood, which we have described; . . . and no less, as is sufficiently familiar to all, does *reflected* irritation from any distant organ set in train the identical rôle of phenomena, *the womb oftenest of all organs*; hence, the expression of the philosophic and observing Dr. Power, 'metastatic labor-pains,' which, being interpreted by us, means *reflected and distributed uterine irritation.*"

From the above-described condition of excitability in the nervous system of the pregnant woman, and the recognized capacity of the uterus, by its wide-spread relations, to become the excitor of reflex phenomena, it is not surprising that the nutritive and trophic processes, being perfected within its organism, even independently of any extraneous or superadded irritation, should give rise to morbid or *quasi*-morbid phenomena in various and distant regions of the body; indeed, by virtue of this reflex control, it is capable of modifying or of increasing the functional activity of apparently every organ or system of the entire organism.

That nausea and vomiting should be one of the exhibitions of this ever-abiding and never-absent reflex potentiality can surprise no one who will consider the conditions for their production, or that the presence, in a more or less active degree, of these most common of all the reflexes should have

come to be regarded as among the normal concomitants of pregnancy.

With these considerations before us, it can well be appreciated how any irritation, superadded to that already existing, would readily convert this occasional and easily endurable disorder, which does not forbid adequate nutrition, into the fierce and unrelenting demon of that perpetual and intolerable nausea and vomiting which resist and eject all food, and which, by long continuance, bring these patients to the verge of the grave by privation and inanition.

I know of no condition of the pregnant uterus so liable to exist, and, when existing, so capable of provoking the irritation to precipitate this calamitous result, as a disturbing displacement of the gravid uterus, which I have so often—indeed, invariably—found to accompany this extreme condition. I use the term here *disturbing* displacement, for it will be recollected that, in the earlier months of pregnancy, a more or less decided downward gravitation of the uterus to a plane below the level of its non-gravid condition is generally recognized as the rule of gestative evolution.

EARLY GRAVID DESCENT PROTECTIVE OF THE OVUM, BUT FAVORABLE TO THE OCCURRENCE OF REFLEXES, IN THE PREGNANT WOMAN.

That downward displacement of the uterus is a normal attendant upon the early months of pregnancy, I may say, has been fully admitted as a fact of *observation;* let us now see if it may not be admitted, also, as a fact of *reason.*

The unimpregnated healthy uterus, suspended or supported at its normal plane in the pelvis, is, as we have seen, a not very sensitive viscus, adjusted for and subject to considerable latitude of motion, often encountering without injury the most abrupt changes of position. These constant tumblings occur in various movements of the body, whether initiated by muscular action or by the sudden jostling of extraneous forces. A teleological interpretation of normal gravid descent may have perhaps the following *formula* for

its expression: The tender germ, in its early ingraftment upon the inner surface of the uterine cavity, would be liable to injurious shaking, *addling*, or to the disruption of its recent attachments, if subjected to the frequent concussions incident to the elevation and insecure suspension which it has at the ordinary plane; again, the recently pregnant womb itself, with its increased vascularity, greatly enhanced nervous susceptibility, and augmented weight and momentum, would, at that elevation, be subjected to many impressions of force or of external violence, injurious and dangerous to or subversive of its function of "gravidal nidation." Both these constantly recurring hazards to prosperous pregnancy are teleologically secured against by the fact that the softened and relaxed ligaments gradually yield to the weight of increasing gravidity. The sensitive *nest*, containing and nourishing the exquisitely delicate *egg* for safety, settles down to a more fixed and secure position between the rectum and bladder, that they may enjoy, for the necessary time, the more stable support offered by the less pendulous but yet elastic floor of the pelvis. By the time that increased growth has rendered the uterine globe too large to be accommodated in its narrow receptacle, attachment of the ovum has been made secure, and established evolution has rendered the uterus itself less susceptible to disturbing influences. The necessary *delivery*, at the period of quickening, out of this profound and bone-girt retirement into a more elevated and less protected environment seems to approach and somewhat typify the final parturition, which establishes for the fetus an independent existence.[1]

Though I have attempted to argue the benefits resulting, as a rule, from the early descent of the uterus as to protection to the tender germ and ovum, I think we can not fail to rec-

[1] Here the glimpse of an analogy may be recognized by some between this ascent of the pregnant uterus at half-term, of its complete development of the fetus, and the gestation of *marsupials*, divided between the uterus and the external abdominal *pouch*. In the view I have above ventured to present, the one does seem dimly to foreshadow the other. "All are but parts of one stupendous whole."

ognize, in this depressed situation of the gravid uterus, when taken in connection with the increased weight of the fundus and the laxity of the uterine ligaments, an enhanced liability to many of the inconveniences which occasionally present themselves, and which may become actual disorders and dangers during those earlier months of pregnancy. Exaggeration of the natural, and what we may call *functional*, gravid descent gives rise to the inconveniences resulting from gravid prolapses.

Any forward deviation from the normal axis necessarily gives rise to the inconveniences of gravid anteversion; any backward deviation from the normal axis results in the inconveniences—and *dangers* as well—of gravid retroversion; and it is known that a low position of the uterus, non-gravid and gravid, is always favorable to both the anterior and posterior obliquities.

It is on account of this descended condition of the uterus, having for its object a protective and beneficent end, but exceptionally resulting in evil and discomfort, that we find so varied and so numerous a group of *irritations*—local as well as reflected—to hang around and embitter the early months of utero-gestation in a very considerable number of the pregnant women who apply to us for relief. They are caused by either exaggerations of a normally depressed plane of the gravid uterus, or by deviations, forward or backward, from its normal axis.

With the local inconveniences, discomforts, dangers, or catastrophes of the conditions I have been describing, I do not propose to deal in this part of my discussion. We have seen that a great variety of uterine distresses — and threatened abortion among them—received marked and permanent relief by postural pneumatic reposition under the reversal of the bearing of gravity; nor do I propose to discuss more than one of the numerous and greatly varied reflexes which, as I think, can be rationally attributed to this condition of the gravid uterus, and for any of which—in passing, I will add—we could as rationally predicate

relief by the same process of reduction. It is to the nausea and vomiting—the most common, the most distressing, and sometimes the most unmanageable and dangerous of all the uterine reflexes—that I now ask to call attention.

### THE PROLONGED NAUSEA AND VOMITING OF PREGNANCY.

I have endeavored to show that the pregnant uterus is an organism exquisitely and abundantly endowed with innervation as well as vascularity. It may be regarded as a magazine of nerve-force and of nutritive resource, for its own growth and for the development of the fetus. While constituting in itself, in one sense, a complete and distinct organism, it is still sufficiently intimately connected with the general nervous centers of the body to constitute it a center from which excitor influences of the most energetic and clearly recognized character may emanate, to evoke activity in various and often distant portions of the general economy. It has been held from time immemorial, and by humanity universal, long before the reflex function was announced, and by those who had no knowledge of centripetal and efferent avenues of nerve-force, that *the gravid womb was the fons et origo of the gravid nausea.* The latest illumination of science, while it could give the *rationale*, can do no more to establish *the fact.*

Now, before the presentation of the illustrative cases that have been furnished by my own experience, perhaps a not very extended consideration will suffice to show the effect of displacement, rendering the gravid uterus an instrumentality by which this reflex can be so exaggerated as to become provocative of a morbid degree and dangerous form of this natural and unavoidable result of the gestative process.

When we consider the expanded endowments of the gravid uterus, its exaggerated innervation, its abundant vascularity and muscularity, the nutritive and trophic processes being perfected within its organization, and the complex vital activities required to accomplish the important

end of its functional intent, we can well admit that any irritation or disturbance, superadded to the exaltation already existing, might convert it into an excitor center, from which could be radiated the most potent and perturbating reflex excitation, and of a character such as would endure so long as the exciting cause might continue to act upon it.

As I have heretofore remarked in regard to abortion, there may be other causes which may operate also to supply the uterine irritation provocative of reflex nausea, but I can conceive of no condition so apt to exist, and, when existing, so well calculated to convert the gravid uterus into such a center as I have described, for the vigorous irradiation of nerve-force, as the compressed, and crowded, and irritating one in which it is found in some of the more exaggerated forms of gravid displacement.

The following cases, some of them not of recent date, each one more or less varied in its character, will serve to illustrate the value of the genu-pectoral posture and pneumatic reduction in this form of hystero-dynamic reflex of the pregnant condition.

### CASES OF NAUSEA AND VOMITING.

CASE I. *Gravid Retroversion in Early Pregnancy causing Nausea and Profuse Salivation; relieved by Postural Pneumatic Replacement.*—October 16, 1874, called to Mrs. N. T. J., aged forty years. She had had one child by a former marriage, now living, nineteen years of age. She suffered from nausea and inability to take food, but vomited but seldom. The particular phase of reflex irritability in this case was the most profuse and distressing salivation. All day the salivary secretion was so constant and abundant that she was unable to go into company, and at night some six or eight large towels were saturated with the saliva.

Eating was impossible on account of this and of the deathly nausea. She had been confined to her bed for over six weeks. I found her complaining of pains and bearing down in the lower part of the body and rectum, with irritation of the bladder and

frequent micturition. Suspecting gravid displacement, I examined her, and found extreme gravid retroversion of the uterus, the fundus of the womb apparently impacted in the hollow of the sacrum. Repeated efforts to replace the womb proved unavailing on account of this impaction. I was somewhat alarmed at the difficulty of replacement, considering the period of pregnancy (about the fourth month). Being unwilling to make more violent effort at the present time, I directed Mrs. J. to assume the genu-pectoral position frequently during the day, and to use my pneumatic repositor, hoping that the womb might be spontaneously replaced by reversion of gravity. Called the following night; found the organ somewhat movable in the knee and breast posture, on pressure upon the neck and cervical portion of the body as far as I could reach, but it would only slightly revolve on pressure applied either through the vagina or rectum; in this much, the womb appearing more loose and somewhat more movable than on the night before, the fundus still remaining fixed under the promontory of the sacrum, revolving as on a pivot in that situation whenever the neck was pressed downward, to the umbilicus.

Failing to act upon the fundus, as my fingers could not pass beyond the equator of the uterine globe, and fearing that more violent efforts might excite uterine contraction, I directed her to continue the frequent use of the genu-pectoral position during the next day. Examining her the next night in the dorsal decubitus, I found the situation of the womb unchanged, and her symptoms in no particular benefited. Placing her now in the genu-pectoral position, I elevated the perineum with the fingers, a moderate amount of air entered, but no real change of situation occurred; but, on making pressure upon the neck to a very slight degree, the fundus suddenly left its situation under the promontory of the sacrum, revolving into complete and permanent anteversion; this movement was accompanied by an abundant entrance of air and complete ballooning of the vagina. The patient expressed herself as being instantly relieved of the pressure and other unpleasant symptoms. Calling the next day, I found her out of bed—for the first time in several weeks—the salivation and nausea entirely subsided, no examination thought necessary, and in less than a week she was on the street

walking, and out driving. After a prosperous pregnancy, at full term, she was delivered of a healthy child.

In this case it would appear that serious if not fatal impaction was impending. I have attributed the foregoing happy results (correctly or not I can not say) to the effect of position in lessening the size of the womb, by diminishing the turgescence of its walls, thus rendering it more movable. Of course, the turgescence of the rectum and packings of the vagina were lessened by the frequent and prolonged maintenance of the inverted position which she had been instructed to practice.

As to the principal peculiarity of the case itself, reflex phenomena, initiated by uterine irritation, are more or less familiar to every one. They seem to be of at least three distinct kinds: (1) Reflex sensory, shown in various neuralgic affections; (2) reflex motory, indicated by convulsive manifestations, eclampsia being the most serious; and lastly, and rather more obscure than the others, reflex secretory phenomena, of which the above case is a well-marked illustration.

Many facts of observation and of record have long been in our possession clearly denoting the existence of an excito-secretory function of the nervous system and of its influence as connected with uterine irritation. The most common and notable of these are: the limpid and abundant urine of hysteria, the nausea, gastric and intestinal disturbance, besides other deranged secretions with modified circulation and nutrition resulting from uterine irritation, whether of the pregnant or non-pregnant state. There can be no doubt that the profuse salivary discharge—distressing the patient for many weeks, and which was so promptly arrested on the replacement of the womb—was the result of uterine irritation, reflected through the sensory nerves of the organ and through the spinal cord to the ganglia and vaso-motor filaments supplying the salivary glands, fauces, and pharynx—a well-marked exhibition of reflex excito-secretory response in parts widely separated from the seat of irritation.

Case II. *Gravid Retroversion, with Utero-pelvic Impaction; Reduction in Genu-pectoral Posture by Barnes's Dilator distended in the Rectum, and by Rectal Inflation; Nausea and Vomiting relieved.*—In August, 1874, Mrs. H. T. R. had undergone excessive and prolonged fatigue in nursing a sister extremely ill. My attention was called to her by a member of the family, who said she had eaten nothing for a week or more, and vomited at all attempts, whether at eating or drinking. I found her lying upon a sofa, extremely pale and emaciated, distressed with incessant nausea. I suggested to her that this was probably the nausea of pregnancy, which she denied most confidently. Inquiring as to her menstrual periods, she stated that she had not menstruated for several months, which irregularity was not an unusual occurrence; she further stated that, in her former pregnancies, she never suffered anything like such nausea.

It being inconvenient to make examination at that time, I furnished her with a pneumatic repositor, explaining its use, and directing her to use it in the genu-pectoral position. I also advised that nutritious enemata of beef-tea should be administered to relieve her present exhaustion.

She stated that she could not retain an enema, as the rectum was very irritable, but she would try. The following day being appointed for examination, I found rectum and bladder both irritable, frequent efforts being made at defecation and micturition; nausea as distressing as ever. She reported that she was not only unable to retain the enema of beef-tea, but found it difficult to introduce the pipe, it giving her great pain, and she abandoned all efforts at rectal nutrition. On examination, the uterus was found enlarged and in a condition of extreme retroversion, the cervix being pressed, though apparently not jammed, against the symphysis pubis, while the fundus rested firmly in the hollow of the sacrum, flattening and obstructing the rectum. The tenesmus of both bladder and rectum was thus easily accounted for. Though this lady discredited her condition of pregnancy, I could not doubt that this was a case of gravid retroversion of about the fourth month. Although she stated that she had received no relief whatever by her use of the pneumatic repositor in the knee

and breast posture, I felt little doubt that the womb could be reduced by careful efforts made by myself with the patient in that position. My friend Dr. J. S. Coleman being in attendance with me, in the case of her sister, I requested him to examine Mrs. R., and we agreed in regard to position of womb.

Placing the patient now in the knee-breast posture, we attempted reduction by elevating the perineum, with a view of letting air into the vagina; there was but slight movement, the neck receding somewhat, but little air entering. Succussion upon the pendant abdominal wall, while the perineum was elevated, had no effect in dislodging the fundus. Pressure upon the cervical portion and body of the womb failing to correct the malposition, the finger was introduced into the rectum and carried as high as possible, pressure being made downward with the hope of extricating the womb from its situation under the promontory. Finding that little air would enter the rectum to distend it, unless force could be applied to the fundus beyond the equator of the uterine globe, we determined, while in this position, to introduce into the rectum, upon a staff, the largest size of Barnes's uterine dilator, carrying it fully into the hollow of the sacrum and beyond the uterine equator. Air was now gradually forced into the India-rubber bag by means of a Davidson syringe, and thus considerable distention was produced, when the womb suddenly became dislodged from its position, and, revolving into complete anteversion, was felt distinctly to occupy a place between the umbilicus and the symphysis pubis, the vagina now being easily distended with air. The patient immediately expressed herself as being entirely relieved of all pressure symptoms as well as of the reflex nausea. On the following day I found this lady again suffering from nausea and unpleasant symptoms, for she had felt able to resume her former fatiging duties in attendance upon her sister. Somewhat alarmed at the recurrence of what I feared I would again find to be a very troublesome displacement, I placed her in the knee-breast posture, elevating the perineum, and allowing air to enter the vagina, which it did imperfectly; and then, introducing the tube repositor into the anus, the rectum became fully distended, and the womb again revolved into its proper position, the rec-

tum acting in this case as a colpeurynter, though it had failed on the day previous, as I had often found it to do in difficult cases of retroversion. A large three-quarter-inch elastic ring-pessary was now introduced in genu-pectoral position, so as to afford support in the posterior *cul-de-sac* of the vagina; this prevented recurrence of the displacement, though the lady continued all her fatigues of nursing. There was no return of nausea or other unpleasant symptoms, the pessary was removed in the fifth month, and she went through a prosperous pregnancy and safe delivery at full term.

*Remarks.*—In a former paper read before this Society—September, 1878—rectal alimentation was presented as a valuable resource in the extreme nausea or inanition of pregnancy. This last case presented peculiarities which, as will be seen, rendered this method of sustaining life impracticable. Without the reduction of the gravid retroversion there would have been no rectal cavity to pass in the nutriment, nor even space to introduce the pipe of the syringe, as the rectum was *flattened* against the sacral wall by the impacted fundus. The reposition which relieved the nausea was therefore indispensable to the life of the patient.

Case III. *Extreme and Prolonged Nausea and Vomiting in Gravid Retroversion; Induced Abortion attempted; promptly and permanently relieved by Pneumatic Reduction.*—In August, 1883, called in consultation to Washington, Wilkes County, Ga., with Drs. Ficklen and Lane. Mrs. C. H., primipara, was in about her third month of pregnancy. Her constitution was good, and she was of fine physique. Nausea extreme from time of conception. No food or drink could be retained even in the smallest quantities and at long intervals. At the beginning of the nausea it was found that one-eighth-of-a-grain puncture of morphine afforded relief. This dose had increased to over a grain two or three times a day, with only slight and temporary cessation of vomiting. She had lost much flesh, though emaciation was not extreme. Her physicians, apprehending a fatal result, and appalled at the rapid increase of morphine demanded in the case, had attempted in-

duced abortion by a sponge-tent passed into the cervix with this view. On examination, I found the uterus in a state of extreme retroversion and firmly packed in the hollow of the sacrum, and somewhat tender to the touch. The os was in a state of decided dilatation from the sponge-tent removed the day before. I advised immediate and complete replacement as an important measure in the present case. The patient was placed in the knee-breast posture, the perineum elevated with two fingers of the left hand, and succussion made by pushing up and down the pendant abdomen of the patient with the right hand. Air at once entered and filled the vagina, and the gravid uterus was jostled out of the hollow of the sacrum and revolved into its proper place behind the symphysis pubis. I advised that the patient should practice nightly self-replacement in the genu-pectoral position, with a tubular repositor to admit the air, till after the fourth month or after quickening ; and, further, that, in case of nausea, rectal alimentation should be followed. The result of this case was most satisfactory : the nausea at once subsided, the morphine was soon omitted, and rectal alimentation was never resorted to, as the patient found herself able to take food naturally in sufficient quantities.

Mrs. H. had a most comfortable and prosperous gestation, and was delivered naturally, on the 7th of the February following, of a healthy child, now living. That the use of the sponge-tent and other efforts made did not induce abortion is somewhat remarkable as well as fortunate.

Case IV. *Extreme Anteversion in Second Month of Gestation ; Constant and Excessive Nausea and Vomiting ; Alarming Emaciation ; Postural Pneumatic Reduction, followed by Entire Relief.*—On December 12, 1883, called to Mrs. D. B. M., at Abbeville, S. C., in consultation with Dr. James Mabry. Mrs. M. was two months advanced in pregnancy with her first child. She was in convalescence from fever. Extreme nausea had existed from the date of conception. The exhaustion and debility in this case were alarming ; food and drink were constantly rejected. The consultation had been advised by

her physician with the view of considering the measure of induced abortion. The previous existence of fever, the extreme emaciation—bed-sores being threatened—and exhaustion of the patient, the entire gastric disability, and the constant distress from nausea, while they seemed to demand immediate relief, even by the arrest of pregnancy, at the same time unfitted the patient to encounter the shock and the risk of such an aggressive measure as was involved in induced abortion. On vaginal examination, the gravid uterus was found in a state of decided anteversion, the fundus resting heavily upon the pubis and compressing the bladder. The patient had suffered for a long time with dysuria, and, the displacement being recognized, a pessary had been applied without effect, as it did not seem to elevate the fundus. She had been treated by punctures of morphine, but with only a temporary and no encouraging effect.

Placing the patient in the knee-breast posture, full and complete reduction was made, and a gum-elastic ring-pessary was applied. The nausea became less distressing, and the vomiting soon ceased. The patient soon began to be adequately sustained by food taken by the mouth, supplemented for a while by rectal alimentation. Her appetite and digestion became excellent, so that she took food in full, and sometimes apparently in imprudent quantities. She shortly after passed the period of quickening, and gestation advanced without discomfort, when she was delivered of a healthy living child. She has since been delivered of a second child, during the gestation of which she suffered from no excessive nausea.

The foregoing case will be remarked as signalizing the fact, as reported by others, that a *forward* gravid displacement is capable of producing nausea and vomiting and emaciation in an extreme degree, and that its correction was promptly followed by the disappearance of all untoward symptoms.

Case V. *Nausea and Vomiting, with Gastric and Enteric Pains, relieved by Postural Pneumatic Reduction of Gravid Retroversion.*—August 6, 1884, Mrs. G. M. T., of Washing-

ton, Ga. Called in consultation with Dr. Henry F. Andrews. Patient aged about twenty-five years, and in the third month of first gestation ; of a nervous and excitable temperament. Had had nausea and vomiting in an extreme degree from the time of conception apparently. She complained of distressing gastric and enteric pains. On my entering the room she said : "Doctor, you relieved a friend of mine like magic, and I have sent for you to relieve me." I replied that her condition might not be the same. "Well, you must do something for me or I must die."

On examination, I found a gravid retroversion, the uterus lying back fully to the horizontal plane. The fundus was somewhat tender. There was an expression of great distress in her countenance, and her emaciation was considerable. As in the other cases I have reported, her medical attendant had put in requisition all judicious medicinal means for arresting the nausea and vomiting : the bromides, bismuth, cerium, and morphine puncture had been used without satisfactory results.

Placing the patient in the genu-pectoral posture, and dilating the vulva, the air entered fully, and the uterus revolved into its proper position on making moderate abdominal succussion. She said she had felt a movement which had given her pain, but that her nausea was not relieved. I requested her to lie upon her right side, and left the room. Returning in an hour after, the patient stated that the nausea had ceased in ten minutes after I left, and had not returned. She slept well that night, and had but little nausea and no vomiting the next morning.

In order to secure against a return of the displacement, I applied a gum-elastic ring-pessary 3¼ inches in diameter, after full reduction in the genu-pectoral posture. I also advised that the pneumatic repositor be applied once or twice a day to prevent the womb from bearing heavily upon the pessary.

This lady was able to retain an adequate amount of food after the replacement. Though suffering from occasional nausea for some time, she passed the remaining months quite comfortably, and was naturally delivered of a healthy child at full term.

PNEUMATIC SELF-REPLACEMENT.

The foregoing five cases have been selected from a number of others on account of the extreme degree of nausea and inanition, and the obvious danger impending, which rendered them particularly illustrative of the relief conferred by postural pneumatic reduction. Of cases of a less alarming degree of distress from gravid nausea and vomiting a large number could be presented. In many of such cases, after examination and digital pneumatic reduction, I have directed the patient to use the pneumatic self-repositor in the genu-pectoral posture as often as was found to be required to relieve the nausea, but principally at bed-time. This, in the larger majority of the cases, has been attended by relief more or less decidedly marked. From a considerable number of these I have never heard again, to record or report the result. I will state here that it has been for many years my invariable rule to recommend nightly self-replacement in all cases consulting me for the nausea of pregnancy. Of this large class of cases I find that I have preserved but imperfect and scanty records.

I will, however, as an illustration of this class of cases, present a brief extract from a letter from the husband of one of these patients, received while the notes are being written out for these *Transactions*.

CASE VI. *Nausea in the Second Month of Pregnancy relieved by Nightly Self-replacement with the Pneumatic Repositor in the Genu-pectoral Posture.*—In October, 1885, Mrs. E. F. K., aged about thirty years, a lady of high intelligence and of good constitution and general health, was in the second month of her third pregnancy, when her husband applied to me for remedies to control the excessive nausea of her condition. He stated that in her previous pregnancies her sufferings had been almost unendurable, confining her to bed for months. "Her family physician, a gentleman of much experience, had stated that she suffered more seriously than any one he had ever attended." He writes: "My wife is getting on all right. The little instrument has been of almost incalculable

benefit to her, and has relieved the nausea more than anything that has ever been tried. We are both of us greatly indebted to you for it, for, if she had not used it, she would have had four or five months of uninterrupted sickness. As it is, she has only suffered with a little morning sickness, and occasionally with a little nausea on going to bed at night." This lady is now in the fifth month of her gestation. She has not only been perfectly well, but enjoys every reasonable amount of exercise—among others, boating excursions on the sea-coast.

Were it necessary here to make any defense of pneumatic self-replacement, I could refer to many well-recognized conditions of emergency in which the long-established practice of the profession has been to delegate to the patient, as the best means of securing his comfort, welfare, and safety, the application of methods by his own hands for his relief. The use of enemata in constipation, of catheterism in retention of urine; dilatation of strictures, not only of the urethra, but even of the esophagus and rectum; the reduction of hernia to prevent strangulation—are some of the more familiar examples, in most of which, from the frequency wherein expedients of relief are required, and the extreme danger of delay, the patient must of necessity acquire skill in self-treatment, or incur great suffering and risk in waiting for the ministrations of the medical attendant.

Little or no argument will be required to prove that uterine displacements—non-gravid and gravid—dangerous and distressing as they often are, belong pre-eminently to the class of affections above mentioned. They constantly recur, and must be promptly reduced.

In the gravid displacements of which we are now treating, as we have endeavored to show, abortion would be often rendered imminent by delay, and very few or none could secure the personal attendance and ministrations of the physician as frequently during each day as uterine replacement is demanded, to save the patient from the distresses and disas-

ters that attend upon the prolonged and unrelieved nausea and vomiting of the early months of pregnancy.

Self-replacement, the only form of self-relief at the moment demanded, will—when practicable and understood by the patient here, as in the several conditions analogously referred to—most happily supply the required alleviation and supply the means of escape from impending disaster. I have endeavored to show that under no other circumstances, in no other conditions, and upon no other possible principles, than upon those I have attempted to elaborate and illustrate in the foregoing paper, can this desideratum of self-treatment in uterine luxation be so safely devised or so effectively applied. The *formula* is one easy of comprehension. Let the patient assume *properly* the genu-pectoral posture and, by some simple means, as the pneumatic self-repositor, allow the entrance of air into the vagina. Thus she will accomplish for herself immediate and complete uterine reduction under the reversal of gravity.

To commit to "a suffering woman" the generally recognized important operation of replacing (even in the sense I am urging) her own womb; and that perhaps a pregnant womb, threatening to empty itself on account of its muscular irritability, must be at first blush, I admit, a novel and possibly, to those not long familiar with or who can not readily *take in* the idea, a somewhat startling proposition. It may suggest, perhaps, the fear of danger to the patient, and possibly the charge of rashness or of dereliction on the part of the physician. Long experience in the results of such committal has rendered me perfectly confident — indifferent, even, to any suggestion of danger; and an ineradicable conviction of the consummate importance of full reduction, and also of its equal safety, in the hands of the physician and of the patient herself, in the vast majority of cases, renders me equally indifferent to the charge of dereliction. I expect to continue the practice myself as long as I give advice to women in such dangerous and threatening circumstances.

THE PNEUMATIC SELF-REPOSITOR.

I had for many years recognized the advantages of frequent automatic reduction in chronic uterine displacements. With this view I had recommended patients suffering from these malpositions to assume the genu-pectoral posture, especially on going to bed at night. Some few reported satisfactory relief from the maneuver, while the majority would abandon it, as affording no abatement of the discomfort whatever. A little investigation soon furnished the explanation. In some few, of delicate and spare habit, the reversal of gravity and draft of the viscera would be allowed to act by air entering spontaneously through the relaxed vulva, without digital or other mechanical aid. In others—by far the larger class—from the close approximation of the labia and the resistance afforded by the closed vulva, no air entering, equilibrium failed, and gravity could not act in the reduction. Of course, in this class there may have been exceptional cases of utero-pelvic impaction, or of adhesion, or of some impeding degree of socketing, not amenable to automatic reduction without manual aid.

To supply the needed air-way, then, was all that was necessary to perfecting the nightly *self-replacement* so much desired. This, by a progressive series of devices, was at last reduced to the simple, and now everywhere attainable, little instrument here presented. It consists of a glass tube open

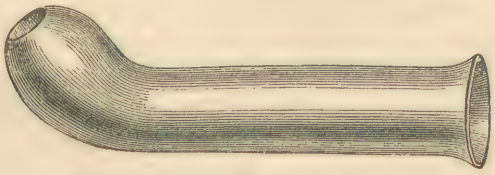

Fig. 15.—Campbell's Uterine Repositor.

throughout, but, as here represented, bulbous at one end, and slightly flexed to facilitate introduction. This furnished the means of supplying conveniently the only wanting condition to automatic reduction. Being in the possession of the

patient, it affords her a ready and efficient means of a self-replacement.

Finding that the rim was often broken, I have since directed both ends to be flexed and made bulbous, for convenience as well as safety, as found in the present cut.


Fig. 16.—Sigmoid Self-Repositor.

This sigmoid form of the repositor has been found to answer the purpose of an air-way in every variety of subject requiring such an instrument for pneumatic reduction. Being of small caliber, and easy of introduction, even the hymen seldom presents obstruction to its entrance.

I will here remark that, while the condition of virginity renders vaginal examination and the ordinary efforts at uterine replacement objectionable to the patient and her friends, virgins are yet by no means exempt from uterine dislocations, or from the distressing local and reflex evils that attend them. In many cases of this class, presenting the rational symptoms of uterine displacement, I have, without imposing upon the patient the embarrassment of an exact diagnostic examination, and without risk to the hymen, accomplished the required relief by directing the patient, or her mother, to secure for her automatic reduction by introducing this attenuated form of the repositor while in the genu-pectoral position.

For the larger class of patients—married women, and those suffering from nausea and other reflexes resulting from gravid displacements—I have found the dumb-bell repositor very convenient, and less liable to be drawn into the vagina, as has occurred in a few instances, on account of strong visceral draft and the sometimes relaxed vulval entrance of the gravid condition.

In regard to the general use or application of the pneu-

matic self-repositor I can not accurately state. I know that it is manufactured in large numbers and furnished by the gross to the druggists and instrument-dealers in various portions of the country, and through them distributed to physicians

Fig. 17.—The Dumb-Bell Self-Repositor.

for the use of their patients. To my own knowledge they are prescribed, in every variety of discomfort, to the non-pregnant as well as to the pregnant female under their care.

In my didactic lectures, and in my own practice, it has been my habit to recommend its nightly application for all who require relief of nausea, or of the discomforts of early pregnancy, until after the period of quickening, when, generally, these reflexes cease to disturb or render uncomfortable the natural progress of gestation. As I stated in my first paper—Savannah, 1875—"nightly self-replacement not only affords present relief, but facilitates *quickening*, or at least ascent of the womb, and anticipates the liability to impaction."

In each of the severe cases heretofore reported the patient was recommended, and did practice, nightly self-replacement to prevent the recurrence of the nausea, after I had made digital pneumatic or other mechanical reduction for its immediate relief.

Before closing the body of these remarks on the genu-pectoral position, I must ask to do well-merited justice to one who has gone hand-in-hand with me in the elaboration and promulgation of this now well-established method of uterine reduction. Himself the author of one of the earliest and most instructive presentations of the subject, he has added

to a full and thorough comprehension of the philosophic bearings of this widely applicable postural method the ingenuity, skill, and lucid demonstration of the artist in the clear and convincing illustrations he has furnished for every proposition of the text. To Dr. A. Sibley Campbell, of Augusta, Georgia, I here render cordial acknowledgments for his valuable illustrations furnished for the present and all the previous communications I have made in regard to the genu-pectoral posture as a method of uterine reduction. In whatever discussion that may be made hereafter, in systematic works or in lectures, or elsewhere, on the subject of automatic postural reduction of the uterus, I can but think that his elegant diagrammatic representations must necessarily form a most important adjunct to its effective presentation.

Ten years ago—April, 1875—the future of the genu-pectoral position and of the pneumatic self-repositor was written in terms which their wide promulgation since can declare whether the words recorded a chimera or a prophecy: "When the power of inverted gravity, as can only be secured in this posture and by pneumatic pressure, comes to be generally understood as the means of uterine replacement; when it is taught as such in all the medical colleges, demonstrated in the hospitals, discussed fully and fairly in the societies and journals, distinctly and prominently insisted upon, as it is not anywhere now, in the standard works and text-books on gynecology; when it shall be the rule, as most surely it will, that no pessary or other appliance of internal support shall be used without previous reduction of the dislocated uterus, by pneumatic pressure in the knee-and-breast posture; again, when, no less by the unhappy patients themselves than by their medical attendants, self-replacement shall be recognized as the "ready method" of securing relief—relief from lumbar and sciatic pains, from aching knees, from vesical and rectal irritation; when it shall be known as a resource, often, *for averting abortion*, and for educing magic comfort out of the very midst of the protean distresses of malposition; when,

indeed, from their uniform relief to the suffering and the imperiled, posturing shall become as familiar as kneeling, and the repositor as any implement of toilet convenience—then can we feel satisfied that this potent instrumentality has attained to the full and comprehensive measure of its surpassing usefulness, and that it can *never* again fall into neglect and desuetude."

### STATISTICS OF OTHER METHODS OF TREATMENT.

The medical profession of this country, as well as of Europe, are indebted to Dr. Graily Hewitt for his valuable paper, historical and critical as well as practical, on the subject of what he terms in the title "The Severe or so-called Uncontrollable Vomiting of Pregnancy."[1] In this paper, for a copy of which I here render to the distinguished author my acknowledgments, Dr. Hewitt reviews many of the theories in regard to the pathologic conditions of the gravid uterus, which are thought to underlie and originate the distressing phenomena attending this most serious and, according to his statistics, often fatal condition of pregnancy. His total results indicate a fatality which would not be generally suspected. Another striking revelation in these statistics is the frequency and little apparent debate with which induced abortion has been resorted to as an expedient of relief. I was not surprised at the frequent fatality attending this desperate resort; for this aspect of the question we had become familiar with in researches made on the subject at the time of considering the importance of rectal alimentation in the nausea and inanition of pregnancy.[2]

Though not in the slightest degree influenced by either the spirit or the literal enunciation of that *dogma* of the Roman Catholic Church forbidding the destruction of the life of the child or of the fetus, even on any consideration as to the safety of the mother, I have never had occasion but

[1] London, 1885, *Transactions of the Obstetrical Society of London*, vol. xxvi.

[2] "*Gynecological Transactions*, vol. iii, September, 1878.

in a single instance to practice induced abortion for any condition of danger to the mother, and in that single instance the condition was not that of impending death from gravid nausea, but for alarming and increasing attacks of asphyxia from a disordered heart and respiratory system, for which I had fruitlessly exhausted every remedy. But none who would conscientiously obey this misconceived *dogma* of his Holiness could be more determinedly opposed to the practice of induced abortion than I have been; and also for a conscientious reason, for I believe that in no instance in which the extremity of the patient's condition would *warrant* such a measure would the mother have any better chance of life afforded her than she would from the possible cessation of the nausea, or from the coming on of spontaneous abortion.

We must remember that the conditions here differ from both those of criminal abortion in healthy subjects—who nevertheless often die from its effects—and from spontaneous abortion, in which the womb, without violent aggression upon it, empties its contents by a gradually progressive activity of the muscular walls. In this stage of the exhausting nausea the woman is in a state of impending death: starved, anemic, and almost exanimate. Add, now, to this devitalized condition the shock of induced abortion, with its loss of blood, almost unavoidable, and we snuff out the last flickering ray which the nearly burnt-out candle has been able to send up from the empty socket. Death, it appears to me, would be about as certain to the mother as to the child we destroy.

Out of thirty-two cases of severe nausea tabulated by Dr. Hewitt, eleven died, and there were twenty recoveries, one result not known. Copeman's method of dilatation of the cervix with the finger, with sponge-tents, and dilators is also discussed in this paper, and more favorable results are shown from it than perhaps from any other of the manifestations, and sometimes prolonged, violent, and painful methods employed and reported.

From a review of Dr. Hewitt's paper—though he attributes much importance to Copeman's method by cervical dilatation, and tolerates, with more equanimity than I possibly can, the measure of induced abortion as one of the resources—we can still gather, from the considerable number of cases he reports, that, when reduction of the gravid uterus could be made, which he represents as being accomplished often with great difficulty, the nausea ceased. I can but believe that, in many of the cases treated on Copeman's plan, by digital dilatation and otherwise, the uterus was, in some rough and violent way, accidentally elevated or replaced, and to this I am inclined to attribute the recovery far more than to the dilatation itself.

Another difficulty spoken of is, that the uterus could not be *retained* in position. On the plan of pneumatic postural reduction, it has been seen that, without any force, or violence, or pain—nay, without even a *touch*—the gravid uterus is generally promptly replaced by simply allowing air to enter the vagina; and, in case of a return of nausea, pneumatic self-replacement may be repeated by the patient as many times a day as may be found necessary to relieve the nausea, until after the permanent ascent at the time of quick ening. Even where I have used the elastic ring-pessary to retain the gravid uterus in position, the nausea may return, by its weight overcoming the sustaining resistance of the support; and also, in such cases, I recommend the application of the self-repositor when both womb and pessary become adjusted to a comfortable position in the pelvis, and the nausea is relieved.

In relation to considerations based upon the histological conditions of the body or cervix uteri, as related to the nausea and vomiting of pregnancy, except in the light of such conditions rendering it a more intensified reflex center for aggravation by displacement, I would not attach much importance. Certainly the observation and detection of such conditions could not aid us much in the *remedial treatment* of a pregnant uterus in a woman almost exanimate from nausea,

vomiting, and inanition. As to that one of constriction of the os internum and externum, it has been seen that in one of my extreme cases full dilatation by the sponge-tent was followed by no abatement of the nausea whatever, and yet postural pneumatic reduction secured instant and permanent relief.

I am not surprised at the difficulty and generally estimated danger found to be attached to reduction of the gravid uterus in advanced stages of bodily decline, resulting from this distressing and most exhausting of all the reflexes of pregnancy. I would not know *how to begin* replacement of a gravid uterus in dorsal *decubitus* under such circumstances without having before my eyes the imminent risk of using such violence and of producing such a shock to the womb and nervous system of the woman as would, in such a condition of irritability, exanimation, and debility, endanger the spark of vitality yet remaining.

I must confess that my own sphere of thought has been so long bounded by and limited to replacement in the genu-pectoral position—with the heavy viscera all drifted away, with heavy abdominal wall relaxed and hanging down, with atmospheric pressure equilibrated, and the uterus in impending revolution by its own reversed weight—that I can not entertain the idea of uterine replacement, either gravid or non-gravid, in any other position or under any other circumstances than these I am describing. Here a mere touch or a little abdominal succussion has so often sufficed to cause the organ to revolve into its place that further efforts, when found necessary, have been rather the rare and surprising exception than the rule.

In the present paper I have been unwilling to consider the important question of the nausea and vomiting of pregnancy except in connection, as I have done, with detailed expedients of postural reduction, as to be applied in impeded revolution. Especially have I been particular to illustrate and detail the methods of my experience in impeded *anteversion*, for, as is known, though not the case in my own

observation, a very large number of the most obstinate cases of reflex nausea have occurred with the forward obliquity as its concomitant.

Believing, as I do, that the gravid displacement is indeed the true source of all the observed histological alterations in the gravid uterus, and also that this gravid displacement is, as I have said, the *fons et origo* of the gravid nausea, I must urge, as my first and last expedient for the relief of all these common evils, arising from a common cause, *repeated postural pneumatic reduction in the genu-pectoral position.*